

INDEPENDENT ORBITER ASSESSMENT

ASSESSMENT OF THE EXTRAVEHICULAR MOBILITY UNIT VOLUME 1 OF 2

10 MARCH 1988

MCDONNELL DOUGLAS ASTRONAUTICS COMPANY
HOUSTON DIVISION

SPACE TRANSPORTATION SYSTEM ENGINEERING AND OPERATIONS SUPPORT

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INDEPENDENT ORBITER ASSESSMENT
ASSESSMENT OF THE EXTRAVEHICULAR MOBILITY UNIT FMEA/CIL

10 MARCH 1988

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Independent Orbiter Assessment
Assessment of the Extravehicular Mobility
Unit System FMEA/CIL

1.0 EXECUTIVE SUMMARY

The McDonnell Douglas Astronautics Company (MDAC) was selected in June 1986 to perform an Independent Orbiter Assessment (IOA) of the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL). Direction was given by the STS Orbiter and GFE Projects Office to perform the hardware analysis using the instructions and ground rules defined in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986.

The IOA effort performed an independent analysis of the Extravehicular Mobility Unit (EMU) hardware and system, generating draft failure modes criticalities and potential critical items. To preserve independence, this analysis was accomplished without reliance upon the results contained within the NASA FMEA/CIL documentation. The IOA results were then compared to the most recent (upto December 31, 1987), proposed Post 51-L NASA FMEA/CIL baseline. A resolution of each discrepancy from the comparison was provided through additional analysis as required. This report documents the results of that comparison for the Orbiter EMU hardware.

The IOA product for the EMU independent analysis consisted of four hundred and ninety-seven failure mode worksheets that resulted in three hundred and ninety potential critical items. A comparison was made of the IOA product to the NASA FMEA/CIL baseline (undated, received October 1987) which consisted of 614 FMEAs and 474 CIL items. Differences between the number of IOA worksheets and NASA FMEAs resulted from either different levels of analysis (e.g. a subassembly versus a component) or due to the failure mode not being identified within the original analysis. Errors of omission by the IOA were corrected by additional analysis whereas those within the NASA FMEA are identified within this report for future correction.

All discrepancies resulting from the comparison were offered for discussion however, due to NASA time constraints, only a limited number of these discrepancies were discussed and only a small portion of these resolved. The 153 issues identified in this report with the NASA EMU subsystem manager (SSM); remain to be resolved either by the NASA accepting them or rejecting them. Figure 1 presents a comparison of the NASA FMEA with the IOA final results and any remaining issues.

The IOA also notes that the EMU secondary oxygen pack (SOP) is now categorized as an emergency subsystem rather than a redundant or back-up subsystem. This recategorization was recommended by the IOA's initial EMU analysis report.

EMU OVERVIEW ASSESSMENT SUMMARY

EMU ASSESSMENT SUMMARY

LIFE SUPPORT SUBSYSTEM			
IOA	NASA	* ISSUES	
FMEA	508	455	82
CIL	413	365	22

SPACE SUIT ASSEMBLY			
IOA	NASA	* ISSUES	
FMEA	180	159	31
CIL	134	109	18

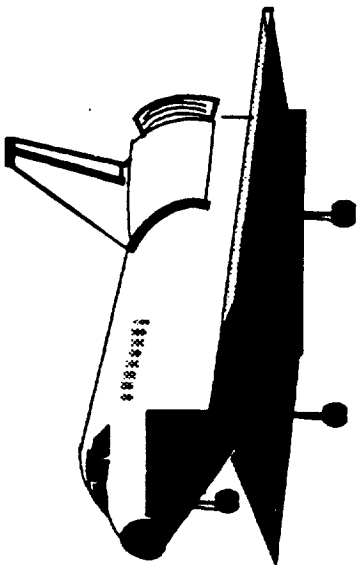
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Figure 1 - ASSESSMENT SUMMARY

* NASA PROPOSED BASELINE AS OF 1 JANUARY 1988

Figure 1 - ASSESSMENT SUMMARY

* NASA PROPOSED BASELINE AS OF 1 JANUARY 1988

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2.0 INTRODUCTION

2.1 Purpose

The 51-L Challenger accident prompted the NASA to readdress safety policies, concepts, and rationale being used in the National Space Transportation System (NSTS). The NSTS Office has undertaken the task of reevaluating the FMEA/CIL for the Space Shuttle design. The MDAC is providing an independent assessment of the proposed Post 51-L Orbiter FMEA/CIL for completeness and technical accuracy.

2.2 Scope

The scope of the independent FMEA/CIL assessment activity encompasses those Shuttle Orbiter subsystems and GFE hardware identified in the Space Shuttle Independent FMEA/CIL Assessment Contractor Statement of Work. Each subsystem analysis addresses hardware, functions, internal and external interfaces, and operational requirements for all mission phases.

2.3 Analysis Approach

The independent analysis approach is a top-down analysis utilizing as-built drawings to breakdown the respective subsystem into components and low-level hardware items. Each hardware item is evaluated for failure mode, effects, and criticality. These data are documented in the respective subsystem analysis report, and are used to assess the proposed Post 51-L NASA and Prime Contractor FMEA/CIL. The IOA analysis approach is summarized in the following Steps 1.0 through 3.0. Step 4.0 summarizes the assessment of the NASA and Prime Contractor FMEA/CIL which is documented in this report.

Step 1.0 Subsystem Familiarization

- 1.1 Define subsystem functions
- 1.2 Define subsystem components
- 1.3 Define subsystem specific ground rules and assumptions

Step 2.0 Define subsystem analysis diagram

- 2.1 Define subsystem
- 2.2 Define major assemblies
- 2.3 Develop detailed subsystem representations

Step 3.0 Failure events definition

- 3.1 Construct matrix of failure modes
- 3.2 Document IOA analysis results

Step 4.0 Compare IOA analysis data to NASA FMEA/CIL

4.1 Resolve differences

4.2 Review in-house

4.3 Document assessment issues

4.4 Forward findings to Project Manager

2.4 Ground Rules and Assumptions

The ground rules and assumptions used in the IOA are defined in Appendix B.

3.0 SYSTEM DESCRIPTION

3.1 Design and Function

The Extravehicular Mobility Unit (EMU) is an independent anthropomorphic system that provides environmental protection, mobility, life support, and communications for the Space Shuttle crewmember to perform Extravehicular Activity (EVA) in Earth orbit. EVA has been defined for EMU analysis considerations as any time the EMU external environment pressure is below 4.0 psia. A schematic of the EMU is provided in Figure 2.

The EMU has been designed to accommodate an EVA mission with a total duration of 7 hours maximum, consisting of 15 minutes for egress, 6 hours for useful EVA tasks, 15 minutes for ingress, and a 30 minute reserve.

The EMU primarily consists of the Life Support System (LSS), Space Suite Assembly (SSA), and the Caution and Warning System (C&W).

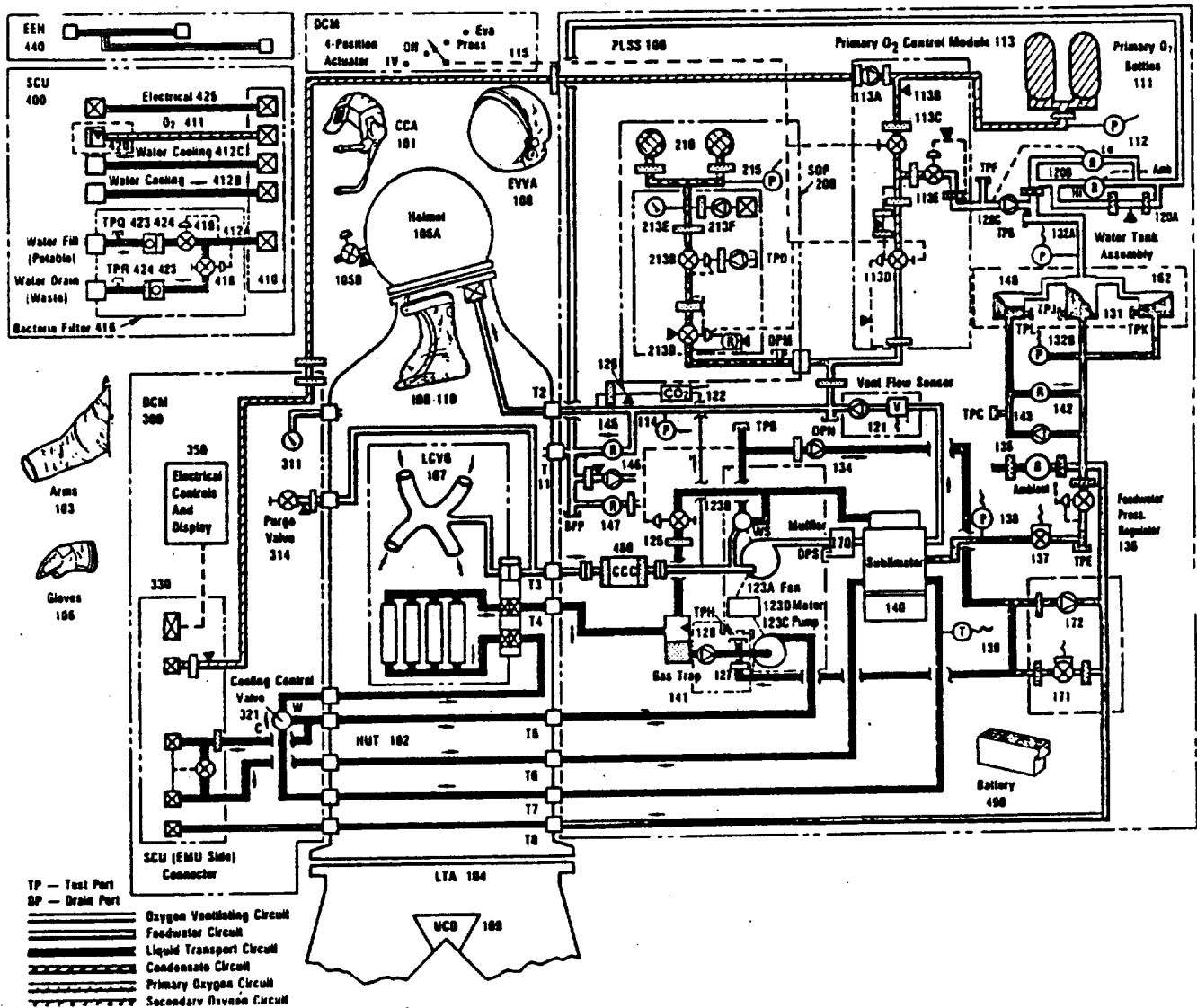
1. Life Support Subsystem (LSS) - The LSS subsystem provides the following for the suited crewmember:
 - a. Pressurization
 - b. Thermal control
 - c. Breathing oxygen
 - d. Display and control of critical system parameters
 - e. Humidity, odor, and contaminant control
 - f. Electrical power storage and distribution
 - g. Communications

The assemblies and hardware which make up the LSS are described below.

- o The Primary Life Support Subsystem (PLSS), reference Figure 3, is an assembly which normally provides the crewmember with oxygen for breathing, ventilation, and pressurization and water for cooling. Additionally, with respect to the IOA analysis, the PLSS provides for the storage and distribution of power throughout the EMU and for the maintenance of the suit atmosphere.

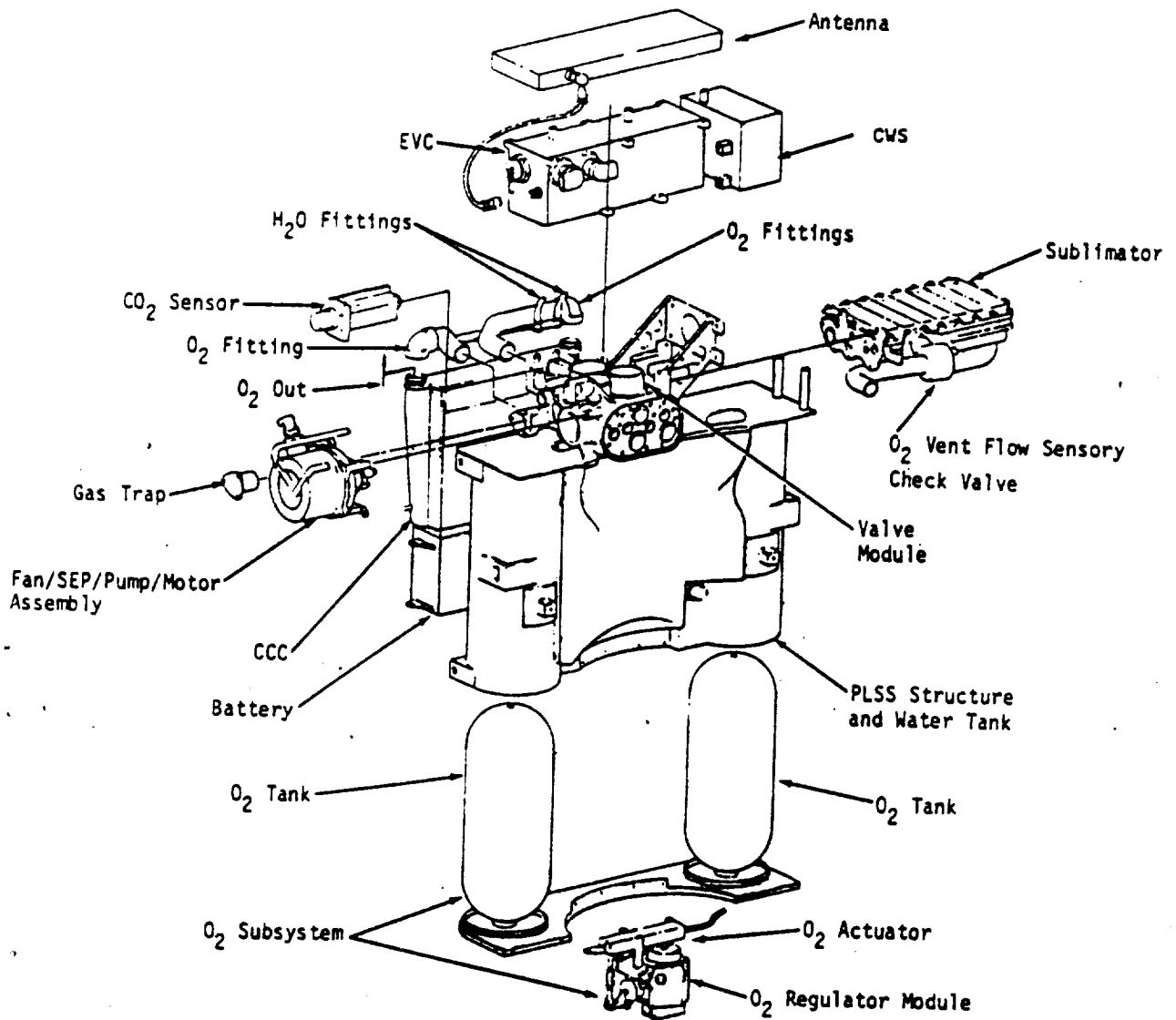
The PLSS consists of oxygen bottles and water tanks together with associated regulators, relief valves, and plumbing. Also contained within the PLSS are a water pump, an air circulation fan, a sublimator used for water cooling, and a water separator used to remove excess moisture from the ventilation lines. Integral to the PLSS are several sensors used by the Caution and Warning System (CWS) in monitoring life support subsystem function.

Figure 2 - EMU FUNCTIONAL SCHEMATIC



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Figure 3 - PLSS, EVCS, AND CWS



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Within the PLSS, the Contaminant Control Cartridge (CCC) contains an activated charcoal bed for trace gas removal, a LiOH bed for CO₂ removal, and a particulate filter to remove solid particles. The CCC is installed in the back of the PLSS and is replaceable in flight for EMU recharge.

EMU mission power requirements during EVA are satisfied by the PLSS battery which stores and provides the electrical power for the operation of all electric components of the EMU, reference Figure 4. The battery mounts into the back of the PLSS, is replaceable in flight, and can be recharged while installed in the PLSS.

- o The Secondary Oxygen Pack (SOP), reference Figure 5, is a functionally independent life support system, providing the EMU with an emergency back-up oxygen system for a minimum of 30 minutes. It provides oxygen for suit loop backup pressure regulation and an open loop oxygen purge for removal of heat, CO₂, and humidity in the event of a loss of the primary function. The SOP is mounted to the bottom of the PLSS and employs the same oxygen delivery path as the PLSS. Due to the numerous critical functions supported by the SOP, its operation and hardware are discussed in detail in the following paragraphs.

The SOP assembly contains two oxygen storage pressure vessels, a two stage regulator, a dial-type pressure gauge, a pressure transducer, and an oxygen fill connector (for servicing the SOP through Ground Servicing Equipment only).

Oxygen from the SOP is controlled by a two-stage regulator. The second-stage regulator also acts as the shutoff valve for this system. The second-stage regulator is caged when the oxygen actuator is in the OFF, IV, and PRESS positions. When the oxygen actuator is placed in the EVA position, the second-stage regulator is uncaged and oxygen is allowed to flow as demanded. The second-stage regulator also has a manual override that provides for crewmember checkout of the SOP during Pre-EVA operations.

The first-stage regulator reduces the nominal supply pressure of approximately 6000 psig to an interstage pressure of 240 to 280 psig. The second-stage regulator further reduces the interstage pressure to maintain the ventilation loop at

3.33 to 3.55 psid over a flow range of 4.51 to 5.26 lb/hr, 3.33 to 3.9 psid over 1.01 to 4.5 lb/hr, and 3.4 to 3.9 psid over 0.06 to 1 lb/hr.

If the second-stage regulator fails open, the outlet of the regulator acts as a flow-limiting orifice, limiting flow to 7.49 lb/hr, allowing the suit relief valve to maintain suit pressure. The second-stage regulator is designed to maintain suit pressure with an upstream pressure equal to full tank pressure.

Initiation of the SOP pressure make-up requires no action by the crewmember. The SOP purge is used to deliver oxygen or to remove CO₂, heat, and humidity from the system and is initiated by the crewmember manually opening the DCM purge valve. In this manner, suit pressure is controlled to 3.33 to 3.9 psid and a maximum oxygen flow of 4.9 lb/hr is delivered from the SOP through the helmet over the body, and then overboard via the purge valve to remove CO₂, heat, and humidity. A back-flow check valve in the PLSS ventilation duct helps direct all flow to the helmet.

If the purge is initiated by the crewmember opening the helmet purge valve on the helmet. Suit pressure is controlled from 3.33 to 3.9 psid and a flow of 2.5 lb/hr is delivered through the helmet. Flow in this mode is into the helmet through the vent pad, over and around the crewmember's head, and then out through the helmet purge valve; no cooling is provided.

- o DCM - The Displays and Controls Module (Figure 6) contains the visual displays and electrical and mechanical controls required for operation of the EMU by the EVA crewmember. Contained in the DCM are the cooling control valve, the suite pressure gauge, a purge valve, the SCU interface connector, a significant portion of the EMU electrical control electronics and switches, and the remote actuator for oxygen regulators. The DCM mounts directly to the front of the HUT.
- o SCU - The Service and Cooling Umbilical is a 12-ft umbilical that consists of three water hoses, a high-pressure oxygen hose, electrical wiring and bacteria filters. The SCU supplies the PLSS with electrical power, communications, oxygen, waste water drainage, and water cooling from the Orbiter during pre- and post-EVA operations. It also supplies the EMU with recharge of the oxygen tanks, water tanks, and battery.

The vehicle end of the SCU consists of four ECLSS connections and one electrical connector that connects the SCU to the Orbiter service panel. The connections are permanent and do not require crewmember operation.

The common connector on the EMU end of the SCU combines the four fluid and one electrical circuit connector into a single connector operated by the crewmember.

- o EVCS - The EMU radio is a UHF/AM transceiver installed within the PLSS (reference Figure 3). It provides the following basic functions.
 - o Duplex voice communications with another EVA crewmember and the Orbiter
 - o Biomedical (ECG) Telemetry via a subcarrier
 - o A backup communications mode that provides simplex voice-only communications between the Orbiter and EVA crewmembers

Additionally, the radio provides audible caution and warning tones when cued by the CWS to alert the crewmember in the event of abnormal or unsafe conditions.

The low profile, omnidirectional UHF antenna is mounted in a pocket of the thermal cover on top of the PLSS. It consists of three resonating cavity antennas, one for each of the frequencies used.

Figure 4 - EMU ELECTRICAL INTERFACES

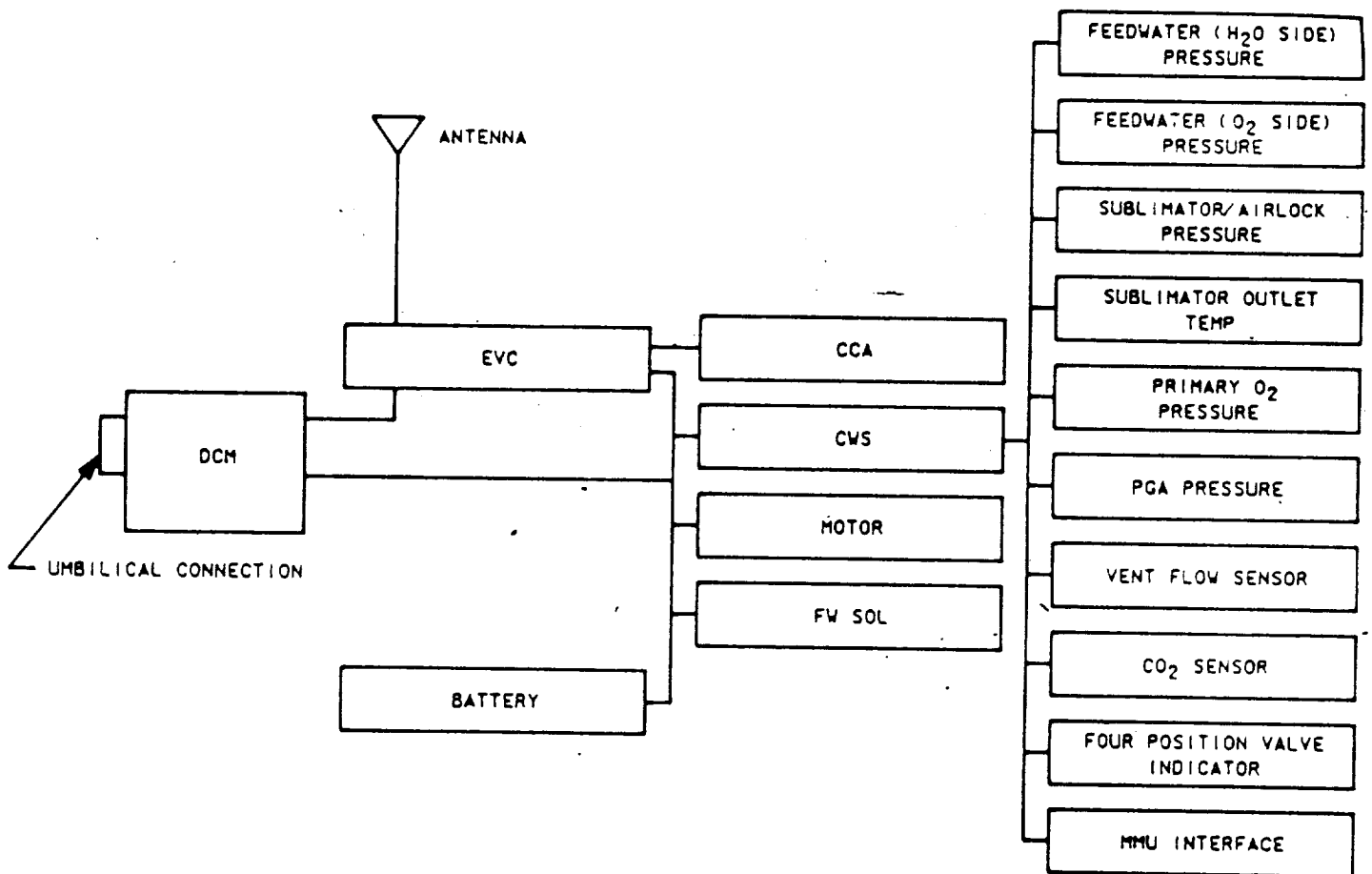
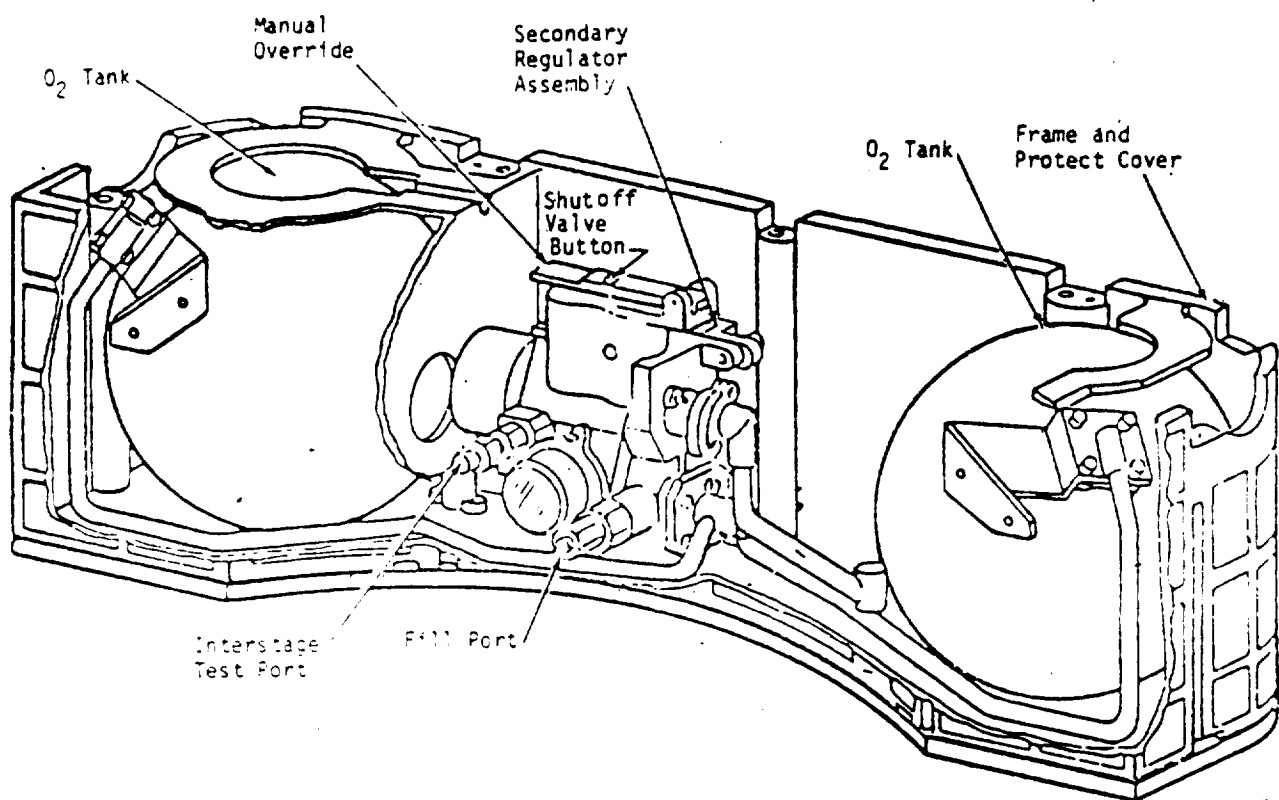
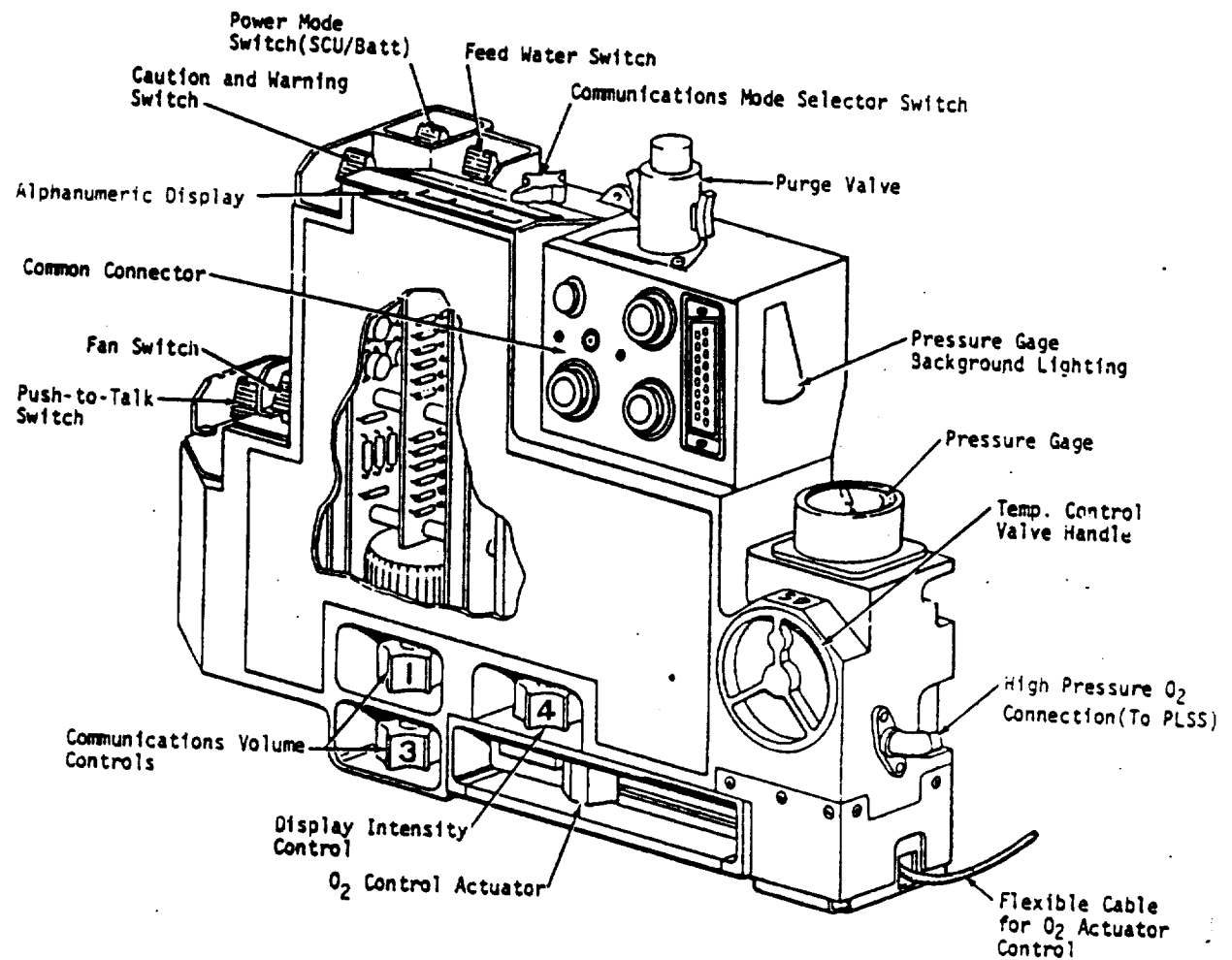


Figure 5 - SOP



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Figure 6 - DCM



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2. Space Suit Assembly (SSA) - The SSA, reference Figure 7, provides crewmember enclosure for all EVA operations. Containment of the pressurized environment, ventilation and cooling loop support, crewmember mobility and crewmember visibility are the primary functions provided by the SSA. The assemblies and components comprising the SSA are discussed in the following paragraphs.
- o HUT and Arms: The hard upper torso includes provisions for the attachment of the helmet/visor, arms, lower torso, PLSS, and DCM. The upper torso consists of a hard torso section, the upper half of the waist ring, the lower half of the helmet neck ring, and the TMG. Integral to the upper torso structure is the channeling for both cooling water circulation and ventilation oxygen circulation. Each arm consists of an upper arm and a lower arm connected by the arm bearing. The upper arm includes the upper torso interfacing scye bearing, a shoulder joint, a conformal bladder, and a TMG. The lower arm includes the glove interfacing wrist disconnect, an elbow joint, a conformal bladder, and a TMG.
 - o LTA: The lower torso assembly provides coverage for the crewmember from the waist down. It includes a waist bearing, waist section, legs, boots, boot soles, fabric restraint, bladder, and TMG. The top of the lower torso is the lower half of the waist ring, which provides space suit assembly separation for donning, doffing and support for the waist section and hip joints. The redundant axial restraint system transmits loads through all joints from the boots to the lower half of the waist ring.
 - o Gloves: The EV glove provides protection from both vacuum and temperature extremes for the crewmember's hand. A conformal urethane bladder provides pressure integrity while a polyester cloth restraint system keeps the bladder from deforming when pressurized. A multi-layer insulation (MLI) thermal blanket covers the bladder/restraint system with an Ortho fabric outer layer over the MLI. An adjustable plam restraint bar enables the crewmember to tighten the glove palm area as required for hand mobility.
 - o Helmet/Visor Assembly: The helmet/visor consists of the helmet bubble and the visor assembly, which are permanently attached. The bubble is a clear rigid pressure-retaining vessel made from UV-stabilized polycarbonate material. Integral to

Figure 7 - SSA



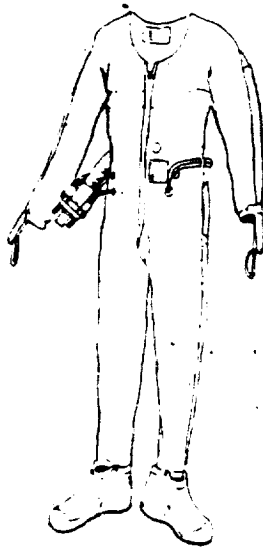
IN-SUIT DRINK
BAG

COMMUNICATIONS
CARRIER
ASSEMBLY

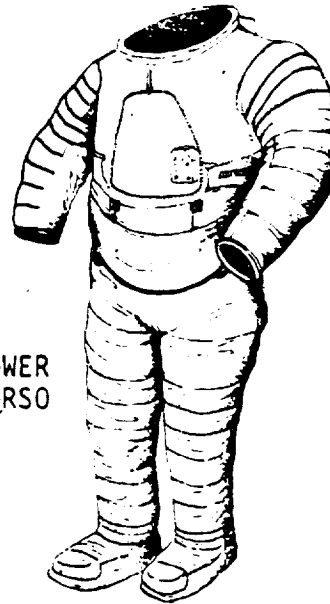


HELMET/VISOR
ASSEMBLY

LIQUID COOLING
GARMENT



UPPER
TORSO



LOWER
TORSO



UCD



GLOVES

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the helmet bubble are the helmet neck ring, which attaches to the upper torso neck ring, and the vent pad, which directs the oxygen flow to the helmet over the crewmember's face for effective carbon dioxide removal. The helmet purge valve is located on the left side of the helmet.

The visor assembly protects the crewmember and helmet from thermal and solar radiation. It consists of visors, pivot and latch mechanisms, center and side eyeshades, and supporting structures for the visors and the shades. The visors are fabricated from UV-stabilized polycarbonate and polysulfane material with thermal/optical coatings applied to the inner surface.

- o LCVG: The cooling garment is a form-fitting elastic garment worn against the crewmember's body. The garment supports a network of tubing that circulates cooling water over the body. It also supports a network of ducting that draws ventilating gas from suit extremities to complete the suit ventilation loop. Connections to the ducting in the HUT for both cooling water and vent flows are made at the multiple connector.
 - o CCA: The comm cap is a fabric skull cap encapsulating microphone and earphone electronic modules.
 - o UCD: The male UCD is a rubberized fabric bladder worn inside the cooling garment around the waist with a roll-on cuff for interfacing with the crewmember. Urine contained in the UCD may be dumped into the urine tube of the Waste Collection System (WCS). The UCD can contain a maximum of 32 fluid ounces of urine.
3. Caution and Warning System (CWS) - The EMU caution and warning system monitors system configuration, environmental parameters, and consumables status. When detected, faults are displayed to the crewmember automatically. The crewmember can display suit parameters and consumables status at any time. The Shuttle EMU is independent of ground monitoring and control.

The CWS microprocessor is the heart of the EMU CWS and is located on the top side of the PLSS. This box contains the central processing unit, the memory, the analog to digital converters, and the latching relays necessary to processing incoming sensor information and providing it to the crewmember.

3.2 Interfaces and Locations

The EMU interfaces with the Shuttle Orbiter airlock, its mission equipment provisions, and the MMU.

The Orbiter airlock provides stowage for the EMU during launch, orbit, and reentry by means of the EMU mount. The EMU mount serves as the EMU donning and doffing station during EVA preparation and post-EVA operations in the airlock. During EVA prep and post activities, the EMU is connected to the Orbiter Environmental Control and Life Support Subsystem (ECLSS) in the airlock by the SCU for airlock-supplied oxygen, cooling water, communications, and power. Before a second EVA, the EMU is connected to the Orbiter ECLSS by the SCU for EMU recharge. During recharge, the EMU is stowed in the airlock on the EMU mount which serves as a recharge station to permit simultaneous water and oxygen charging, LiOH cartridge replacement, and battery charging or replacement.

The EMU interfaces with crewmember restraint and translation provisions in the airlock and cargo bay. These provisions include handholds, handrails, foot restraints, and tether attachment points.

The Manned Maneuvering Unit (MMU) provides the EVA crewmember a free space maneuvering capability outside the Orbiter cargo bay. The EMU latches to the MMU with the passive half of the latching device provided by the PLSS. The MMU contains the active half of the latching mechanism. Additionally, the MMU support station provides restraints and handrails to aid the EVA crewmember in donning and doffing the MMU.

3.3 Hierarchy

Due to the approach employed by the IOA, the EMU system was analyzed in a hierarchal manner to ensure consistency in fault path definition and in the identification of failure effects. The top level hierarchy employed for EMU analysis considerations is presented in Figure 8.

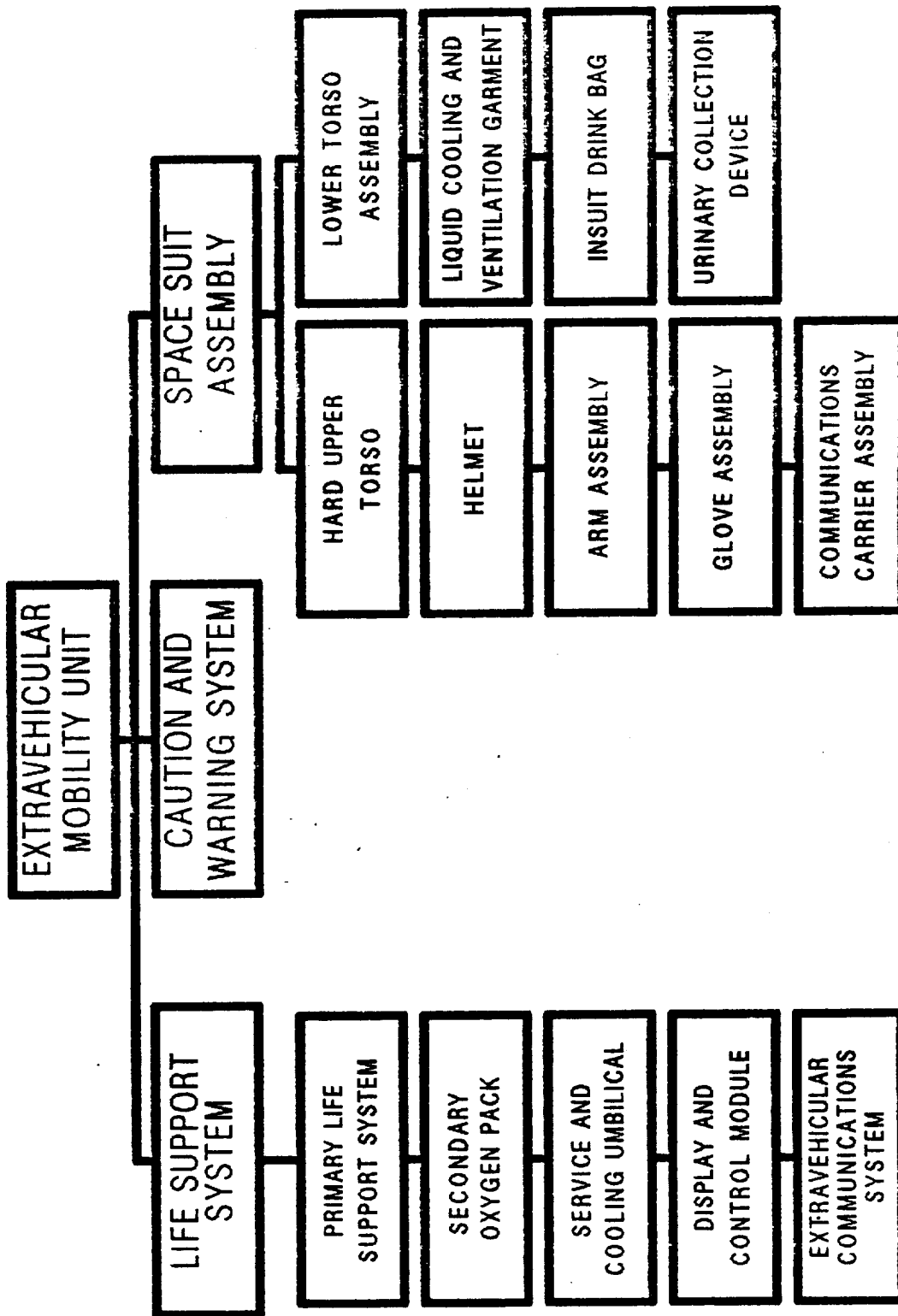


Figure 8 - EMU HIERARCHY

4.0 ASSESSMENT RESULTS

The IOA analysis of the EMU hardware initially generated 497 failure mode worksheets and identified 390 Potential Critical Items (PCIs) before starting the assessment process. In order to facilitate comparison, 169 additional failure mode analysis worksheets were generated. These analysis results were compared to the proposed NASA Post 51-L baseline of (the most recent available as of December 31, 1987). The discrepancy between the number of IOA and NASA FMEAs can be explained by the different approach used by NASA and IOA to identify failure modes or simply by errors of omission. Errors of omission and incongruities in analysis detail by the IOA were corrected by additional analyses (reference appendix E). Fifty-three (53) failure modes were identified by the IOA analysis that were not covered by the NASA FMEAs. The IOA recommends the addition of all these failure modes to the NASA FMEA baseline; however, only forty-two were considered issues due to CIL impacts.

In the analysis report, the EMU was EVCS included as an area of analysis; however, in the assessment report the EVCS has not been included due to its incorporation into the IOA communications and tracking report. Additionally, the IOA did not encompass electrical power harnesses and connectors per the approval of the IOA NASA task monitor.

With regard to the issues, the IOA has identified a total of one hundred and fifty-three (153). Ninety (90) of these are concentrated in the PLSS and the DCM. This was not unexpected due to each subsystem's complexity and significant use of redundancy. These features resulted in different levels of analysis and in different determinations of redundancy by both the IOA and the NASA. Another area of PLSS and DCM issues resulted from differing usage of screen B detectability requirements. The NASA established an interpretation that so long as the crewmember could obtain safe haven upon detection the screen would be passed; however, the IOA disagreed with the use of an emergency system (the SOP) to support obtaining safe haven.

The largest remaining block of issues (40) are distributed throughout the HUT, helmet, arm assemblies, glens, and the LTA. Although many of these issues are similar in cause to those of the PLSS and the DCM (namely different levels of analysis or different interpretation of redundancy), a large group of these resulted from a common failure mode - loss of pressure integrity. The NASA would "qualify" the failure mode as loss of pressure maintenance capability in excess of SOP make-up capability. The IOA's concern was that it automatically assumed loss of the SOP in assigning a 1/1 criticality; the IOA would prefer a 2/1R with a failure of screen B and screen C to reflect the failure scenario.

The IOA also notes that the SOP has been determined to be an emergency subsystem to the EMU. The IOA recommended the SOP to be just that in the IOA analysis report issued in 1986.

In the following, the unmapped IOA column is the raw number of IOA failure modes. The mapped IOA column is the number of IOA failure modes after they have been mapped into the NASA FMEAs. The issues column is the IOA failure modes that were unable to be mapped onto NASA FMEAs.

<u>EMU</u>	<u>IOA Unmapped</u>	<u>Mapped</u>	<u>NASA</u>	<u>ISSUES</u>
LSS (Total)	489	508	455	104
PLSS	225	227	217	48
SOP	30	33	31	5
SCU	38	41	37	4
DCM	178	189	156	42
C&W	18	18	14	5
SSA (Total)	172	180	159	49
HUT	34	35	28	12
Helmet	18	18	17	2
Arms	21	23	24	7
Gloves	20	21	20	6
LTA	44	46	41	13
LCVG	16	17	17	1
IBD, UCD, CCA	19	20	12	8
<u>Total</u>	<u>661</u>	<u>688</u>	<u>614</u>	<u>153</u>

Appendix C presents the detailed assessment worksheets for each failure mode identified and assessed. Appendix D highlights the NASA Critical Items and corresponding IOA worksheet ID. Appendix E contains IOA analysis worksheets supplementing previous analysis results reported in Space Transportation System Engineering and Operations Support (STSEOS) Working Paper No. 1.0-WP-VA86001-15, Analysis of the Extravehicular Mobility Unit, 15 December 1986. Appendix F provides a cross reference between the NASA FMEA and corresponding IOA worksheet(s). IOA recommendations are also summarized therein.

A summary of the quantity of NASA FMEAs assessed, versus the recommended IOA baseline, and any issues identified is presented in Table I.

Table I Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
LSS (Total)	455	508	104
PLSS	217	227	48
SOP	31	33	5
SCU	37	41	4
DCM	156	189	42
C&W	14	18	5
SSA (Total)	159	180	49
HUT	28	35	12
Helmet	17	18	2
Arms	24	23	7
Gloves	20	21	6
LTA	41	46	13
LCVG	17	17	1
IDB, UCD, CCA	12	20	8
TOTAL	614	688	153

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table II.

Table II Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
LSS (Total)	365	413	22
PLSS	189	205	8
SOP	27	28	-
SCU	33	37	14
DCM	102	126	-
C&W	14	17	-
SSA (Total)	109	134	18
HUT	17	24	5
Helmet	13	13	1
Arms	23	23	1
Gloves	14	17	3
LTA	31	38	7
LCVG	7	8	1
IDB, UCD, CCA	4	11	-
TOTAL	474	547	40

Table III presents a summary of the IOA recommended failure criticalities for the Post 51-L FMEA baseline. Further discussion of each of these subdivisions and the applicable failure modes is provided in subsequent paragraphs.

Table III Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
LSS (Total)	25	198	146	41	49	43	502
PLSS	5	143	37	22	10	9	226
SOP	20	5	3	-	2	3	33
SCU	-	1	36	-	2	2	41
DCM	-	41	61	19	35	28	184
C&W	-	8	9	-	-	-	18
SSA (Total)	8	63	56	4	9	36	171
HUT	3	9	10	1	1	8	32
Helmet	1	2	9	1	3	2	18
Arms	1	15	6	1	-	-	23
Gloves	2	5	9	-	1	3	20*
LTA	1	26	9	1	1	8	46
LCVG	-	3	5	-	-	9	17
IDB,UCD,CCA	-	3	8	-	3	6	20
TOTAL	33	261	202	45	58	79	673

* Certain analyses by IOA for this item were deleted for technical reasons.

Of the failure modes analyzed, twenty-four were determined to be potential critical items. A summary of the IOA recommended critical items is presented in Table IV.

Table IV Summary of IOA Recommended Critical Items						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
LSS (Total)	25	198	146	28	49	413
PLSS	5	143	37	16	10	205
SOP	20	5	3	-	2	28
SCU	-	1	36	-	2	37
DCM	-	41	61	12	35	126
C&W	-	8	9	-	-	17
SSA (Total)	8	63	56	3	9	134
HUT	3	9	10	1	1	24
Helmet	1	2	9	-	3	13
Arms	1	15	6	1	-	23
Gloves	2	5	9	-	1	17
LTA	1	26	9	1	1	38
LCVG	-	3	5	-	-	8
IDB,UCD,CCA	-	3	8	-	-	11
TOTAL	33	261	202	31	20	547

The scheme for assigning IOA assessment (Appendix C) and analysis (Appendix E) worksheet numbers is shown in Table V.

Table V IOA Worksheet Numbers	
Component	IOA ID Number
LSS	100-499, 700-799
SSA	601-699, 800-899

4.1 Assessment Results - PLSS

The PLSS Assessment encompassed two hundred and twenty-seven (227) failure modes applicable to various PLSS components and assemblies. Of this number, 48 were considered to be IOA issues with the NASA analysis. As stated earlier, many of these issues have resulted from different levels of analysis or different determinations of redundancy and detectability.

Because no specific trend or "common thread" existed for these issues (other than those previously mentioned), the IOA

recommends use of each individual assessment for evaluation by the NASA.

4.2 ASSESSMENT RESULTS - SOP

The SOP assessment resulted in five (5) issues. One issue has already been reviewed with NASA (new failure mode-blocked SOP bottle inlet filter) and accepted as a 1/1 criticality. The remaining typically result from different levels of analysis and scenarios definition.

4.3 ASSESSMENT RESULTS - SCU

Three of the four SCU issues resulted from incomplete mission scenario development by the NASA. The IOA believes their review and incorporation by the NASA will result in more complete mission profiles by the NASA. The remaining issue (IOA ID No. 349) is solely with the determination of mission impact.

4.4 ASSESSMENT RESULTS - DCM

One hundred and eighty-nine (189) failure modes were addressed in the IOA DCM assessment. Forty-two (42) of these were determined to be issues with the NASA analysis. As with the PLSS, no specific "common thread" is evident throughout a majority of these issues except for differences in levels of analysis and determinations of redundancy and detectability. Each of the DCM issues should be reviewed and evaluated based on individual merit.

4.5 ASSESSMENT RESULTS - CAUTION AND WARNING

Five Caution and Warning issues resulted from eighteen assessments. Three of these are new failure modes identified by the IOA (possibly due to different levels of analysis). The remaining two issues recommend upgrades to existing NASA criticalities to more appropriately reflect failure mode impacts.

4.6 ASSESSMENT RESULTS -SSA

One hundred and eighty failure modes were assessed by the IOA for the SSA. Forty-nine (49) of these were determined to be issues. These issues typically resulted from differences in failure mode definition, redundancy identification, and screen B assignment.

As stated earlier, many of the SSA issues are related to loss of pressure integrity. The NASA states for many of these that the loss of pressure integrity is in excess of the SOP makeup capability. However, the IOA believes this statement is valid only if it is inherent to the failure mode for the identified

causes. Since the IOA considers such a statement as an assumption of SOP failure, the IOA recommended a 2/1R criticality rather than the 1/1 typically assigned by the NASA.

5.0 REFERENCES

Reference documentation available from NASA was used in the analysis. The documentation used included:

1. NSTS 22206, Instructions for Preparation of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL), October 10, 1986
2. SVHS 7800, Extravehicular Mobility Unit Design and Performance Requirements Specifications, Rev. M, (no date - last date was Rev. L. 11-26-84)
3. SVHS 10105, CWS Electronics, Design, and Performance Requirements for SEMU Item 150, Rev. A, 5-25-84 (original)
4. SVHS 7801, Environmental Control Equipment, Extravehicular Mobility Unit, General Mechanical Specification for Equipment, Rev. F, (no date)
5. SVHS 7802, Space Shuttle Extravehicular Mobility Unit (EMU) System, General Electrical Requirements for, Rev. A, 3-11-77 (original)
6. SVHS 7808, Specification: Shuttle EMU, SCU and DCM Common Connector (Items 410 and 330), Rev. C, (no date)
7. ICD-HSD-4-0001-0D-0, Space Shuttle EMU/MMU Section I Electrical Interface Document, Rev. L, 2-8-85
8. ICD-HSD-4-0008-OC, Space Shuttle EMU/EVC Interface Document, Rev. G, 12-13-83
9. SV791145, Display, Alphanumeric - Four Character; HSD, Rev. A, 11-7-84
10. SVSK93600, Schematic, Systems Shuttle EMU; HSD, Rev. U, 1-17-86
11. SVSK96170, Schematic, Electrical, DCM; HSD, Rev. B, 3-18-86
12. SV778872, Connector, Multiple; HSD, Rev. Y, 6-17-85
13. SV778596, Switch, Power Mode; HSD, Rev. D, 1-13-84
14. SVSK94600, Schematic, Electrical, DCM; HSD, Rev. AA, 8-10-83
15. SV769939, Valve, Temperature Control; HSD, Rev. K, 11-19-82
16. SV771887, Switch, Fan/CLIV; HSD, Rev. E. 11-19-84
17. SVSK 94002, EMU Wiring Block Diagram; HSD, Rev. N. 12-9-85

18. SVSK 107481, Caution and Warning System Block Diagram; HSD, 5-15-84
19. SV767794, Switch, Push to Talk; HSD, Rev. D, 1-24-84
20. SV767795, Switch, Feedwater Valve; HSD, Rev. F, 10-17-84
21. SV767792, Switch, Caution and Warning; HSD, Rev. F, 9-7-85
22. SV767786, Switch, Mode Selector; HSD, Rev. F, 1-24-84
23. SV767789-02, Battery; HSD, Rev. E, 2-11-86
24. SV767789-03, Battery; HSD, Rev. B, 9-26-84
25. SV778528, Sensor, Pressure, Primary Oxygen; HSD, Rev. C, 9-29-83
26. SV767788, Sensor, Differential Pressure; HSD, Rev. J, 4-1-85
27. 0101-10001, Communications Carrier Assembly; ILC, Rev. N, 4-29-85
28. SV778873, Pressure Control Module - Primary; HSD, Rev. V, 11-17-84
29. SV789111, Switch, Sensitive, Hermetic; HSD, Rev. B, 5-27-86
30. SV785844, Relief Valve, Dual Mode - Oxygen Feedwater; HSD, Rev. T, 12-20-84
31. SV771836, Check Valve and Vent Flow Sensor; HSD, Rev. AV, 11-19-84
32. SV787993, Motor, Brushless; HSD, Rev. M, 2-7-86
33. SV772277, Pump, Water; HSD, Rev. R, 8-6-85
34. SV787994, Fan/Separator/Pump Assembly; HSD, Rev. J, 2-7-86
35. SV769480, Valve, Pilot Actuated; HSD, Rev. N, 5-30-85
36. SV784996, Valve, Check; HSD, Rev. B, 4-27-83
37. SV778543, Filter, Pump Inlet; HSD, Rev. H, 7-17-85
38. SV767699, Valve, Check, Assembly; HSD, 9-6-77
39. SV769403, Valve, Relief Condensate Water; HSD, Rev. N, 5-16-85
40. SV784943, Trap, Gas; HSD, Rev. E, 10-30-84
41. SV769405, Valve, Relief, Water; HSD, Rev. J, 10-4-82

42. SV785860, Valve, Relief; HSD, Rev. H. 11-20-84
43. SV787036, Valve, Positive Relief; HSD, Rev. G, 12-14-84
44. SV85927, Valve, Negative Relief; HSD, Rev. A, 11-19-84
45. SV85970, Box Assy., Caution and Warning; HSD, Rev. N. 12-20-85
46. SV784982, Valve, Isolation; HSD, Rev. F, 6-20-85
47. SV784998, Valve Assy., Coolant Isolation; HSD, Rev. E, 4-15-85
48. SV784985, Valve, Coolant Relief; HSD, Rev. D, 12-4-82
49. ICD-HSD-4-0001-OD-0, EMU-MMU Interface (Section II); HSD, Rev. L, 2-8-85
50. ICD-HSD-4-0008-OC, Figure 6, EVC Envelope Requirement; HSD, Rev. G, 12-13-83
51. SV789152, Harness, Electrical Signal; HSD, Rev. R, 6-24-86
52. SV789151, Harness, Electrical Power, HSD, Rev. AD, 6-30-86
53. SV767710-07, Secondasry Oxygen Pack; HSD, Rev. V, 7-13-85
54. SV778475, Pressure Control Module, Secondary; HSD, Rev. T, 7-2-85
55. SV792294-01, Module, Display and Control; HSD, 6-27-86
56. SV767690-02, Harness, EMU, Electrical; HSD, Rev. F, 12-10-85
57. SV772910, Regulator, Pressure, Water Supply; HSD, Rev. L, 8-20-84
58. SV771717, Regulator, Condensate Water; HSD, Rev. M, 11-8-82
59. SV778865, Hose Assy., SCU; HSD, Rev. F, 8-15-84
60. SV767730-09, Umbilical, Service and Cooling; HSD, 8-8-85
61. SV767785, Potentiometer, Display Intensity; HSD, Rev. F, 2-22-84
62. SV767784, Potentiometers, Volume Control; HSD, Rev. F, 2-23-84
63. SV771763, Harness Assy., Electrical; HSD, Rev. ABH, 6-30-86
64. SV771749, Sheath Assy.; HSD, Rev. H. 2-8-84

65. SV778872, Connector, Multiple; HSD, Rev. Y, 6-17-86
66. SV787027, Purge Valve - DCM;p HSD, Rev. C, 10-9-85
67. SV792291, Electronic Assy., DCM; HSD, Rev. H, 6-21-86
68. SV785003, Connector, Electrical, SCU; HSD, 7-21-82
69. SV764255, Connector, Electrical, Circular; HSD, Rev. J, 8-30-78
70. SV789153, Harness, Electrical, Caution and Warning; HSD, Rev. V, 6-30-85
71. SV779301, Manifold Assy., Oxygen, Water; HSD, Rev. F, 12-9-85
72. SV778540, Shear Plate Assy.; HSD, Rev. BU, 5-27-86
73. 0102-82437-18, ILC Dover, Table of Operations, Waterline/Vent Tube Assembly, 5-14-86
74. 9693, Assembly Multiple Connector LCVS Side, Air-Lock, Inc., Rev. D, 3-17-83
75. 9697, Assembly Three Hose Clamp, Air-Lock, Inc., Rev. D, 3-17-83
76. 9357, Helmet-to-Suit Disconnect Assembly Suit Side, Air-Lock, Inc., Rev. Q, 3-17-83
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78. 0107-82568-09, Table of Operations, Vent Plenum Assembly, ILC Dover, Rev. A, October 1985
79. 0107-81057-19/20, Table of Operations, Boot/Leg Vent Duct, ILC Dover, July 1986
80. 0107-81060-08, Table of Operations, LCVG Hand Vent/Arm Duct, ILC Dover, Rev. A, September 1985
81. 0104-82403-29/30, Table of Operations, Pressure Boot Assembly, ILC Dover, Rev. B, September 1985
82. 9752, Boot Disconnect Assembly, Air-Lock, Inc., Rev. B, 5-16-83
83. 9787, Assembly Body Seal Closure LTA Half (16" Inside), Air-Lock, Inc., Rev. F, 5-16-83
84. 0106-86059-01, Table of Operations, Palm Restraint Assembly, Glove Modified, ILC Dover, Rev. IR, March 1986

85. 0106-23421, Bar, Palm Restraint, ILC Dover, Rev. E, 6-27-83
86. 9924, Wrist Disconnect Assembly Glove Side-Right Hand, Large (3.680 ID), Air-Lock, Inc., Rev. C, 7-26-84
87. 9814, Wrist Disconnect Assembly Suit SIDE-RH, Air-Lock, Inc., Rev. F, 6-12-86
88. 9782, Assembly SCYE Bearing, 8.710 Ball Circles Dia., Air-Lock, Inc., Rev. E
89. 9813, Wrist Disconnect Assembly Suite Side-LH, Air-Lock, Inc., Rev. F, 6-12-86
90. 9819, Combination Purge Vent Assembly, Air-Lock, Inc., Rev. R, 5-17-83
91. 9672, Helmet Assembly, Air-Lock, Inc., Rev. K, 9-23-82
92. 9786, Body Seal Closure Hut Half, 16" Inside, Air-Lock, Inc., Rev. D, 5-12-83
93. SV772302, Retainer and Inserts, Bearing Shoulder, HSD, Rev. M, 1-10-80
94. SV772303, Support, Pivot-Shoulder Bearing, HSD, Rev. E, 7-9-82
95. 0102-82438-15/16 Rev. A, ILC Dover, Rev. A, July 1985
96. 9694, Assembly Multiple Connector, Hut Side, Air-Lock, Inc., Rev. J, 5-2-86
97. SV772375, Shell and Inserts, Large-Hard Torso, HSD, 10-9-78

APPENDIX A
ACRONYMS

AAP	Airlock Adapter Plate
BITE	Built-in Test Equipment
CCA	Communications Carrier Assembly
CCC	Contaminant Control Cartridge
COMM	Communication
CPU	Central Processing Unit
CWS	Caution and Warning System
C&W	Caution and Warning
DCM	Display and Control Module
EVCS	Extravehicular Communications System
ECLSS	Environmental Control and Life Support System
EMU	Extravehicular Activity
EVA	Extravehicular Activity
EVC	Extravehicular Communicator
EVVA	Extravehicular Visor Assembly
EVCS	Extravehicular Communications System
FM	Failure Mode
GFE	Government Furnished Equipment
HSD	Hamilton Standard
HUT	Hard Upper Torso
IOA	Independent Orbiter Assessment
IDB	Insuit Drink Bag
IVA	Intravehicular Activity
LCVG	Liquid Cooling and Vent Garment
LiOH	Lithium Hydroxide
LSS	Life Support System
LTA	Lower Torso Assembly
MMU	Manned Maneuvering Unit
OPS	Operations
PLSS	Primary Life Support Subsystem
SCU	Service and Cooling Umbilical
SOP	Secondary Oxygen Pack
SSA	Space Suite Assembly
STS	Space Transportation System
UCD	Urine Collection Device

APPENDIX B

DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

- B.1 Definitions**
- B.2 Project Level Ground Rules and Assumptions**
- B.3 Subsystem-Specific Ground Rules and Assumptions**

APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

B.1 Definitions

Definitions contained in NSTS 22206, Instructions For Preparation of FMEA/CIL, 10 October 1986, were used with the following amplifications and additions.

INTACT ABORT DEFINITIONS:

RTLS - begins at transition to OPS 6 and ends at transition to OPS 9, post-flight

TAL - begins at declaration of the abort and ends at transition to OPS 9, post-flight

AOA - begins at declaration of the abort and ends at transition to OPS 9, post-flight

ATO - begins at declaration of the abort and ends at transition to OPS 9, post-flight

CREDIBLE (CAUSE) - an event that can be predicted or expected in anticipated operational environmental conditions. Excludes an event where multiple failures must first occur to result in environmental extremes

CONTINGENCY CREW PROCEDURES - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

EARLY MISSION TERMINATION - termination of onorbit phase prior to planned end of mission

EFFECTS/RATIONALE - description of the case which generated the highest criticality

HIGHEST CRITICALITY - the highest functional criticality determined in the phase-by-phase analysis

MAJOR MODE (MM) - major sub-mode of software operational sequence (OPS)

MC - Memory Configuration of Primary Avionics Software System (PASS)

MISSION - assigned performance of a specific Orbiter flight with payload/objective accomplishments including orbit phasing and altitude (excludes secondary payloads such as GAS cans, middeck P/L, etc.)

MULTIPLE ORDER FAILURE - describes the failure due to a single cause or event of all units which perform a necessary (critical) function

OFF-NOMINAL CREW PROCEDURES - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

OPS - software operational sequence

PRIMARY MISSION OBJECTIVES - worst case primary mission objectives are equal to mission objectives

PHASE DEFINITIONS:

PRELAUNCH PHASE - begins at launch count-down Orbiter power-up and ends at moding to OPS Major Mode 102 (liftoff)

LIFTOFF MISSION PHASE - begins at SRB ignition (MM 102) and ends at transition out of OPS 1 (Synonymous with ASCENT)

ONORBIT PHASE - begins at transition to OPS 2 or OPS 8 and ends at transition out of OPS 2 or OPS 8

DEORBIT PHASE - begins at transition to OPS Major Mode 301 and ends at first main landing gear touchdown

LANDING/SAFING PHASE - begins at first main gear touchdown and ends with the completion of post-landing safing operations

APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

B.2 IOA Project Level Ground Rules and Assumptions

The philosophy embodied in NSTS 22206, Instructions for Preparation of FMEA/CIL, 10 October 1986, was employed with the following amplifications and additions.

1. The operational flight software is an accurate implementation of the Flight System Software Requirements (FSSRs).

RATIONALE: Software verification is out-of-scope of this task.

2. After liftoff, any parameter which is monitored by system management (SM) or which drives any part of the Caution and Warning System (C&W) will support passage of Redundancy Screen B for its corresponding hardware item.

RATIONALE: Analysis of on-board parameter availability and/or the actual monitoring by the crew is beyond the scope of this task.

3. Any data employed with flight software is assumed to be functional for the specific vehicle and specific mission being flown.

RATIONALE: Mission data verification is out-of-scope of this task.

4. All hardware (including firmware) is manufactured and assembled to the design specifications/drawings.

RATIONALE: Acceptance and verification testing is designed to detect and identify problems before the item is approved for use.

5. All Flight Data File crew procedures will be assumed performed as written, and will not include human error in their performance.

RATIONALE: Failures caused by human operational error are out-of-scope of this task.

6. All hardware analyses will, as a minimum, be performed at the level of analysis existent within NASA/Prime Contractor Orbiter FMEA/CILs, and will be permitted to go to greater hardware detail levels but not lesser.

RATIONALE: Comparison of IOA analysis results with other analyses requires that both analyses be performed to a comparable level of detail.

7. Verification that a telemetry parameter is actually monitored during AOS by ground-based personnel is not required.

RATIONALE: Analysis of mission-dependent telemetry availability and/or the actual monitoring of applicable data by ground-based personnel is beyond the scope of this task.

8. The determination of criticalities per phase is based on the worst case effect of a failure for the phase being analyzed. The failure can occur in the phase being analyzed or in any previous phase, whichever produces the worst case effects for the phase of interest.

RATIONALE: Assigning phase criticalities ensures a thorough and complete analysis.

9. Analysis of wire harnesses, cables, and electrical connectors to determine if FMEAs are warranted will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

10. Analysis of welds or brazed joints that cannot be inspected will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

11. Emergency system or hardware will include burst discs and will exclude the EMU Secondary Oxygen Pack (SOP), pressure relief valves and the landing gear pyrotechnics.

RATIONALE: Clarify definition of emergency systems to ensure consistency throughout IOA project.

APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

B.3 EMU Ground Rules and Assumptions

1. The overall EMU mission will encompass both planned EVA operations (typically two 2-man EVAs are available each Orbiter mission) and unscheduled EVA operations (typically reserved for Orbiter safety-critical EVA tasks).

RATIONALE: Ensures analysis provides worst-case mission impact.

2. The inability of an EMU to perform an EVA or to satisfy a six-hour EVA duration will be considered a mission impact.

RATIONALE: A worst case scenario in which the EMU is employed for prebreathe, or in which the EVA is time critical (e.g. rescue of stranded EVA crewmember), or in which the EVA objectives require full EVA duration is thus obtained for the IOA analysis.

APPENDIX C DETAILED ASSESSMENT

This section contains the IOA assessment worksheets generated during the assessment of this subsystem. The information on these worksheets facilitates the comparison of the NASA FMEA/CIL (Pre and Post 51-L) to the IOA detailed analysis worksheets included in Appendix E. Each of these worksheets identifies the NASA FMEA being assessed, corresponding MDAC Analysis Worksheet ID (Appendix E), hardware item, criticality, redundancy screens, and recommendations. For each failure mode, the highest assessed hardware and functional criticality is compared and discrepancies noted as "N" in the compare row under the column where the discrepancy occurred.

LEGEND FOR IOA ASSESSMENT WORKSHEETS -----

Hardware Criticalities:

- 1 = Loss of life or vehicle
- 2 = Loss of mission or next failure of any redundant item (like or unlike) could cause loss of life/vehicle
- 3 = All others

Functional Criticalities:

- 1R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of life or vehicle
- 2R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of mission

Redundancy Screens A, B and C:

- P = Passed Screen
- F = Failed Screen
- NA = Not Applicable

NASA Data :

- Baseline = NASA FMEA/CIL
- New = Baseline with Proposed Post 51-L Changes

CIL Item :

- X = Included in CIL

Compare Row :

- N = Non compare for that column (deviation)

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-145
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 145
ITEM: TEMPERATURE SENSOR & HARNESS (ITEM 139)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA ANALYSIS AND CIL. THE IOA EFFECTS SHOULD BE MODIFIED TO IDENTIFY POSSIBLE LOSS OF DC/DC CONVERTER DUE TO CURRENT LIMITER OPENING. IF ACCOMPANIED BY A SUBSEQUENT FAILURE OF THE CCC THE CREWPERSON WOULD NOT BE WARNED OF HIGH CO2 LEVEL. DISORIENTATION AND LOSS OF LIFE COULD RESULT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-166
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 166
ITEM: CONDENSATE H2O RELIEF VALVE (ITEM 134)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE, AND CRITICALITY, IN TO THE NASA ANALYSIS. THE IOA RECOGNIZES THAT THE NASA DID ADDRESS CONTAMINATION AS CASUAL EVENT IN THE NASA FMEA; HOWEVER, THE IOA BELIEVES THE FILTER FAILURE IS A CREDIBLE FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-175
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 175
ITEM: COOLANT RELIEF VALVE (ITEM 172)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [P] [F] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THE ABOVE FAILURE MODE (SCREEN BLOCKED) AND FINDINGS INTO THE NASA ANALYSIS. THE IOA BELIEVES THE SCENARIO WILL BE THE SAME AS FOR A FAIL CLOSED VALVE AND THEREFORE RECOMMENDS THE INCLUSION BE AS A CAUSE FOR THE FAILED CLOSED CASE IN 172-FM2.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-177
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 177
ITEM: COOLANT RELIEF VALVE (ITEM 172)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-195
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 195
ITEM: CONTAMINANT CONTROL CARTRIDGE (ITEM 480)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[F]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW, THE IOA RECOMMENDS DELETION OF THIS FAILURE MODE FROM THE IOA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-202
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 202
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

ALTHOUGH THE NASA ADDRESSES A SHORT AS A CAUSE IN FMEA 121-FM1, THE IOA DOES NOT CONSIDER IT SUFFICIENT TO REPRESENT A CORRESPONDING FAILURE MODE. AS SUCH, THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. ADDITIONALLY, THE IOA EFFECTS SHOULD BE MODIFIED TO REFLECT POSSIBLE LOSS OF THE DC/DC CONVERTER DUE TO THE CURRENT LIMITER OPERATING WITH THIS SHORT. A SIMULTANEOUS LOSS OF THE CO2 CONTROL FUNCTION CAN RESULT IN CREWPERSON LOSS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-224
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 224
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND ANALYSIS INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-225
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 225
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. ALSO, THE IOA ANALYSIS SHOULD BE MODIFIED TO DELETE POSSIBLE LEAKAGE AS AN ADDITIONAL FUNCTIONAL FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-226
NASA FMEA #:

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 226
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND ANALYSIS TO THE NASA FMEA AND CIL. ADDITIONALLY, THE IOA ORIGINAL CRITICALITY ASSIGNMENT HAS BEEN CHANGED FROM 2/1R TO A 3/1R TO REFLECT FURTHER REVIEW.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-304
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 304
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE (REGULATES HIGH) AND FINDINGS INTO THE NASA FMEA AND CIL. A DISCUSSION OF THIS FAILURE MODE WITH THE NASA SSM RESULTED IN AN AGREEMENT THAT IT WOULD BE INCORPORATED INTO NASA FMEA 213B-FM3.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-319
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 319
ITEM: SOP FILL PORT QD AND FILTER (ITEM 213F)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[NA]	[NA]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THE FAILURE MODE FOR
COMPLETENESS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-320
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 320
ITEM: SOP FILL PORT QD AND FILTER (ITEM 213F)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

FURTHER REVIEW BY THE IOA OF THIS FAILURE MODE INDICATES POSSIBLE CREW LOSS IF HIGH VELOCITY OXYGEN FLOW OCCURS WHEN CONTAMINANTS HAVE BEEN PASSED BY THE FILTER. THIS RESULTS IN A HARDWARE "2" CRITICALITY. ALSO, IF AND THE CONTAMINATION RESULTS IN FAILURE OF THE 213B OR D REGULATORS, CREW LOSS COULD RESULT; THEREFORE A FUNCTIONAL CRITICALITY OF "1R" IS ALSO RECOMMENDED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-321
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 321
ITEM: SOP ASSEMBLY (ITEM 200)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[1 /1] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

SUBSEQUENT TO DISCUSSIONS WITH AND IN AGREEMENT WITH THE NASA SSM, THE IOA HAS UPGRADED CRITICALITY DUE TO POSSIBLE HEATING/FIRE FROM FILTER RUPTURE CAUSING LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-342
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 342
ITEM: CONDENSATE H2O REGULATOR (ITEM 418)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-360
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 360
ITEM: SUIT PRESSURE GAGE (ITEM 311)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[1 /1]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS DELETION OF THIS FAILURE MODE FROM THE IOA ANALYSIS DUE TO FURTHER REVIEW REVEALING THE SCENARIO AS NON-CREDIBLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-361
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 361
ITEM: SUIT PRESSURE GAGE (ITEM 311)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND ANALYSIS INTO THE NASA FMEA. (NOTE: THIS FAILURE MODE IS INDICATED AS A "CAUSE" FOR NASA FMEA 311-FM3).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-384
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 384
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[P]	[NA]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND CRITICALITY INTO THE NASA FMEA/CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-385
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 385
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[F]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA HAS REVIEWED ITS ORIGINAL ANALYSIS AND HAS DETERMINED THE SOP TO BE NON-REDUNDANT TO THIS FUNCTION. THEREFORE, THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND ITS ANALYSIS REFLECTING A 3/2R CRITICALITY INTO THE NASA FMEA/CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-386
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 386
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /3] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON ADDITIONAL REVIEW, THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AT A 3/3 CRITICALITY INTO THE NASA FMEA. THIS WILL REFLECT A NON-CRITICAL IMPACT TO IV OPERATIONS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-387
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 387
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. A FURTHER REVIEW OF THE ANALYSIS INDICATED A 2/1R CRITICALITY WAS NOT JUSTIFIABLE AND THE FINAL CRITICALITY OF 2/2 WAS JUSTIFIABLE. THE FINAL CRITICALITY AND ANALYSIS WAS REVIEWED AND AGREED TO BY THE NASA SSM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-394
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 394
ITEM: VOLUME CONTROL (ITEM 360)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE AND CRITICALITY INTO THE NASA FMEA/CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-395
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 395
ITEM: VOLUME CONTROL (ITEM 360)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOGNIZES THE INCORPORATION OF THIS FAILURE MODE IN NASA FAILURE MODES 360-FM1 AND -FM5 AND IS IN AGREEMENT WITH THAT INCORPORATION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-428
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 428
ITEM: PUSH-TO-TALK SWITCH (ITEM 365)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW THE IOA CONSIDERS THIS FAILURE MODE NON-CREDIBLE AND REQUIRES NO FURTHER ACTION UPON IT AND RECOMMENDS ITS DELETION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-439
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 439
ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 / 1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE (CLIV POWER "OPEN" LINE/CONTACT OPEN) INTO THE NASA FMEA AND CIL. THE CRITICALITY HAS BEEN UPDATED TO REFLECT CONSISTENCY RELATIVE TO NASA FMEA 366-FM6 WHICH THE IOA HAS ASSESSED AND CONCURRED WITH.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-440
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 440
ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS THE INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE CRITICALITY HAS BEEN UPDATED TO REFLECT CONSISTENCY RELATIVE TO NASA FMEA 366-FM5 WHICH THE IOA HAS ASSESSED AND CONCURRED WITH.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-442
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 442
ITEM: FAN SWITCH (ITEM 366)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THIS FAILURE MODE IS A DUPLICATION OF MDAC ID 438, THEREFORE, IT IS NOT APPLICABLE AND SHOULD BE DELETED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-460
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 460
ITEM: ALPHANUMERIC DISPLAY (ITEM 369)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THIS IOA ANALYSIS WAS ORIENTED TO AN LED DISPLAY VERSUS THE LCD WHICH IS NOW WHAT THE DCM DISPLAY WILL BE. THEREFORE THIS IOA ANALYSIS IS NO LONGER APPLICABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-461
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 461
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. ADDITIONALLY, THE IOA HAS UPGRADED ITS CRITICALITY TO ENSURE CONSISTENCY WITH THE "LOSS OF DISPLAY" ANALYSIS WHICH IDENTIFY A POSSIBLE, SUBSEQUENT CO2 CONTROL FAILURE AS CAUSE FOR LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-463
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 463
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 1R] [P] [F] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THE FAILURE MODE INTO THE NASA FMEA AND CIL. ADDITIONALLY, THE IOA HAS UPGRADED THE CRITICALITY TO REFLECT POSSIBLE LOSS OF LIFE WITH A CONCURRENT CO2 CONTROL FAILURE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-464
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 464
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THE FAILURE MODE INTO THE NASA FMEA AND CIL. ADDITIONALLY, THE IOA HAS UPGRADED THE CRITICALITY TO REFLECT POSSIBLE LOSS OF LIFE DUE TO A CONCURRENT CO2 CONTROL FAILURE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-468
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 468
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /3]	[]	[]	[]	[]
----------	-----	-----	-----	-----

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS THE NASA INCLUDE THIS FAILURE MODE INTO THE FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-476
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 476
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[NA]	[P]	[] (ADD/DELETE)
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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-478
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 478
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[NA]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FALIURE MODE INTO THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-479
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 479
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-480
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 480
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-485
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 485
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE IOA ALSO RECOGNIZES THAT THE MISSION CAN CONTINUE IF SUFFICIENT LIGHTING WERE AVAILABLE TO READ THE DISPLAY; HOWEVER, THE WORST CASE WOULD ASSUME THERE IS NOT SUFFICIENT LIGHTING.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-486
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 486
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE IOA HAS UPGRADED THE CRITICALITY TO REFLECT A POSSIBLE CONCURRENT CO2 CONTROL FUNCTION FAILURE WHICH CAN RESULT IN LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-487
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 487
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE IOA HAS UPGRADED THE CRITICALITY TO REFLECT A POSSIBLE CONCURRENT CO2 CONTROL FUNCTION FAILURE WHICH CAN RESULT IN LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-488
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 488
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE IOA WOULD ALSO MODIFY THE EFFECTS TO IDENTIFY A POSSIBLE CONCURRENT CO2 CONTROL FUNCTION FAILURE WHICH CAN RESULT IN LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-496
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 496
ITEM: DCM ELECTRONICS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE IN THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-509
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 509
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-510
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 510
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-511
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 511
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-512
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 512
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-513
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 513
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-514
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 514
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-515
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 515
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-516
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 516
ITEM: EVC

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-517
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 517
ITEM: ANTENNA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE DETAILED ANALYSES AND ASSESSMENTS FOR THE EMU EVC SHOULD BE IN THE IOA COMMUNICATIONS AND TRACKING (C&T) REPORTS. HOWEVER, DUE TO AN ERROR OF OMISSION DURING THE C&T ANALYSIS, THE EVC WAS NOT ENCOMPASSED AND SUBSEQUENTLY THE NASA FMEAs WERE FOUND TO BE UNAVAILABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-604
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 604
ITEM: WATER LINE AND VENT TUBE ASSMEBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA ANALYSIS AT A 2/2 CRITICALITY TO REFLECT DEGRADED COOLING EFFECTS ON MISSION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-612
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 612
ITEM: HARD UPPER TORSO SHELL

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL. THE IOA WOULD ADD CAUSES OF CONTAMINATION AND BENT PINS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-616
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 616
ITEM: BODY SEAL CLOSURE (HUT SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW, THE IOA RECOMMENDS DELETION OF THIS FAILURE
MODE FROM THE IOA ANALYSIS DUE TO ITS BEING NON CREDIBLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-617
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 617
ITEM: BODY SEAL CLOSURE (HUT SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW, THE IOA RECOMMENDS DELETION OF THIS FAILURE MODE FROM THE IOA ANALYSIS DUE TO ITS BEING NON CREDIBLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-618
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 618
ITEM: BODY SEAL CLOSURE (HUT SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[1 /1]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW, THE IOA RECOMMENDS DELETION OF THIS FAILURE
MODE FROM THE IOA ANALYSIS. THE ORIGINAL ANALYSIS HAS BEEN
DETERMINED NON-CREDIBLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-675
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 675
ITEM: ROLLON CUFF

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-676
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 676
ITEM: VALVE

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-677
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 677
ITEM: BLADDER

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-678
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 678
ITEM: BLADDER

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-679
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 679
ITEM: HARNESS

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-680
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 680
ITEM: CCA

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-681
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 681
ITEM: CCA

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-742X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 742
ITEM: SHEATH ASSEMBLY (ITEM 428)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 3] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-803X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 803
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[F]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 3/2R CRITICALITY TO ACCOUNT FOR POSSIBLE MISSION IMPACTS FROM HOT/COLD SPOTS WHICH CAN RESULT FROM THE LOOSE TMG IN THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-805X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 805
ITEM: BODY SEAL CLOSURE (HUT HALF)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/2 CRITICALITY TO REFLECT POSSIBLE MISSION IMPACTS RESULTING FROM HOT/COLD SPOTS WHICH MAY ACCOMPANY THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-813X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 813
ITEM: UPPER/LOWER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED THE POSSIBILITY THAT HOT/COLD SPOTS COULD
RESULT IN SUFFICIENT CREWPERSON DISCOMFORT TO CAUSE MISSION
TERMINATION. THE IOA THEREFORE RECOMMENDS A 2/2 CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-820X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 820
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED POSSIBLE HOT/COLD SPOTS AS CANDIDATES FOR CAUSING SUFFICIENT CREW DISCOMFORT THAT THE MISSION IS TERMINATED. THE IOA THEREFORE RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE FMEA AND CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-825X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 825
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

BECAUSE LOSS OF AXIAL RESTRAINT CAN RESULT IN SIGNIFICANT CREWPERSON DISCOMFORT DUE TO EXERTION TO OVERCOME THE RESULTANT DEFORMATION, THE IOA RECOMMENDS A 2/2 CRITICALITY TO REFLECT POSSIBLE MISSION IMPACT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-826X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 826
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

PROBABLE HOT/COLD SPOTS CAN RESULT IN SIGNIFICANT CREWPERSON DISCOMFORT AND MISSION TERMINATION. THE IOA, THEREFORE, RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-829X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 829
ITEM: LOWER TORSO RESTRAINT/BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED THE POSSIBILITY THAT HOT/COLD SPOTS CAN RESULT IN SIGNIFICANT CREWPERSON DISCOMFORT AND MISSION TERMINATION. THE IOA, THEREFORE, RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-834X
NASA FMEA #:

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 834
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 / 2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS INCLUSION OF THIS FAILURE MODE INTO THE NASA FMEA/CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-784X
NASA FMEA #: 100-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 784
ITEM: PLSS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/1R BC CRITICALITY TO REFLECT THAT THIS BRACKET IS ONE OF TWO WHICH IF BOTH WERE LOST CAN RESULT IN SEPARATION OF HUT FROM PLSS AND UNCONTROLLED DEPRESSURIZATION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-785X
NASA FMEA #: 100-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 785
ITEM: PLSS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-786X
NASA FMEA #: 100-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 786
ITEM: PLSS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-787X
NASA FMEA #: 100-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 787
ITEM: PLSS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-840X
NASA FMEA #: 101-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 840
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-842X
NASA FMEA #: 101-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 842
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-841X
NASA FMEA #: 101-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 841
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /3]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA RECOMMENDS A 3/3 CRITICALITY DUE TO NO MISSION OR CREWPERSON IMPACT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-868X
NASA FMEA #: 101-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 868
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-869X
NASA FMEA #: 101-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 869
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-870X
NASA FMEA #: 101-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 870
ITEM: CCA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-601
NASA FMEA #: 102-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 601
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-611
NASA FMEA #: 102-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 611
ITEM: HARD UPPER TORSO SHELL

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES SUCH A FAILURE MUST FIRST RESULT IN LOSS OF PLSS FUNCTION THEN LOSS OF SOP FUNCTION TO CAUSE LOSS OF LIFE. BECAUSE THE DEFINED FAILURE DOES NOT ENSURE THE IMMEDIATE LOSS OF PLSS AND SOP BUT RATHER THEIR LOSS AS A FUNCTION OF FAILURE SEVERITY DEFINITION. THE IOA RECOMMENDS A 2/1R CRITICALITY AND FAILURE OF SCREEN C TO INDICATE THE LOSS OF LIFE SCENARIO.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-846X
NASA FMEA #: 102-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 846
ITEM: HARD TORSO SHELL

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-847X
NASA FMEA #: 102-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 847
ITEM: HARD TORSO SHELL

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-848X
NASA FMEA #: 102-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 848
ITEM: HUT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA ASSUMED THE WORST CASE WHERE THE DISLODGED ITEM POSITIONS ITSELF IN A MANNER WHICH IMPAIRS CREWPERSON VISION OR MOBILITY. THE IOA THEREFORE RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-849X
NASA FMEA #: 102-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 849
ITEM: HUT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-804X
NASA FMEA #: 102-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 804
ITEM: WATER LINE AND VENT TUBE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-605
NASA FMEA #: 102-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 605
ITEM: WATER LINE AND VENT TUBE ASSMEBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-606
NASA FMEA #: 102-FM17

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 606
ITEM: WATER LINE AND VENT TUBE ASSMEBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[NA]	[NA]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-615
NASA FMEA #: 102-FM18

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 615
ITEM: BODY SEAL CLOSURE (HUT SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES SUCH A FAILURE MUST FIRST RESULT IN LOSS OF PLSS FUNCTION THEN LOSS OF SOP FUNCTION TO CAUSE LOSS OF LIFE. BECAUSE THE DEFINED FAILURE DOES NOT ENSURE THE IMMEDIATE LOSS OF PLSS AND SOP FUNCTIONS, BUT RATHER THEIR LOSS AS A FUNCTION OF FAILURE SEVERITY DEFINITION. THE IOA RECOMMENDS A 2/1R CRITICALITY AND FAILURE OF SCREEN C TO INDICATE THE APPLICABLE SCENARIO.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-806X
NASA FMEA #: 102-FM19

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 806
ITEM: BODY SEAL CLOSURE

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-600
NASA FMEA #: 102-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 600
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-613
NASA FMEA #: 102-FM20

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 613
ITEM: GIMBAL ASSY.

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-614
NASA FMEA #: 102-FM21

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 614
ITEM: BELLOWS ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES SUCH A FAILURE MUST FIRST RESULT IN LOSS OF HTE PLSS AND THEN THE LOSS OF THE SOP FUNCTION TO CAUSE LOSS OF LIFE. BECAUSE THE DEFINED FAILURE DOES NOT ENSURE THE IMMEDIATE LOSS OF PLSS OF SOP FUNCTIONS, BUT RATHER THEIR LOSS AS A FUANCTION OF FAILURE SEVERITY DEFINITION. THE IOA RECOMMENDS A 2/1R CRITICALITY AND FAILURE OF SCREEN C TO INDICATE THE APPLICABLE SCENARIO.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-610
NASA FMEA #: 102-FM22

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 610
ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-607
NASA FMEA #: 102-FM23

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 607
ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-610A
NASA FMEA #: 102-FM24

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 610
ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

BECAUSE THE IOA EMCOMPASSED BOTH H2O AND O2 LEAKAGE IN ONE ANALYSIS AND THE NASA SEPARATED THEM IN A MANNER ACCEPTABLE TO JSC 22206, THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-608
NASA FMEA #: 102-FM25

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 608
ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS FOR THE EVA PHASE; HOWEVER, THE IOA ANALYSIS BELIEVES A FAILURE TO NOTE DURING THE PRE-EVA PHASE (DUE TO MATERIAL IN THE MECHANISM OR A MATERIAL FAILURE) WILL RESULT IN A 2/2 CRITICALITY DUE TO INABILITY TO PERFORM THE MISSION

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-609
NASA FMEA #: 102-FM26

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 609
ITEM: MULTIPLE WATER CONNECTOR (HUT HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

ALTHOUGH DOFFING WITH THE MWC ENGAGED HAS BEEN DEMONSTRATED, THE IOA RECOGNIZED THE PROCEDURE AS A CONTINGENCY PROCEDURE WHICH CANNOT BE USED TO DOWNGRADE A CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-619
NASA FMEA #: 102-FM27

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 619
ITEM: HARNESS STRAP AND HARNESS PAD ASSMEBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-851X
NASA FMEA #: 102-FM28

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 851
ITEM: HUT TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED THE POSSIBILITY THAT HOT/COLD SPOTS COULD CAUSE SIGNIFICANT CREWPERSON DISCOMFORT AND CAUSE MISSION TERMINATION. THE IOA, THEREFORE, RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-602
NASA FMEA #: 102-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 602
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND THE SOP ARE REDUNDANT TO EACH OTHER AND MUST EACH BE FAILED FUNCTIONALLY FOR LOSS OF LIFE TO RESULT. ADDITIONALLY, THE IOA RECOMMENDS FAILURE OF SCREEN C TO INDICATE THE POSSIBILITY THAT A SINGLE EVENT MAY RESULT IN LOSS OF THE PLSS AND SOP FUNCTIONS. THE IOA, THEREFORE, RECOMMENDS A 2/1RC CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-801X
NASA FMEA #: 102-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 801
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-802X
NASA FMEA #: 102-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 802
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS AND RECOMMENDS A HAZARD ANALYSIS TO REVIEW IMPACTS OF A LOOSE SCREW IN THE EMU.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-603
NASA FMEA #: 102-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 603
ITEM: NECK RING AND VENT SEAL ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[1 /1]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS. HOWEVER, THE IOA WOULD ALSO RECOMMEND FAILURE OF SCREEN C TO REFLECT POSSIBILITY THAT THE CASUAL EVENT (E.G. IMPACT) WHICH RESULTS IN FAILURE OF ONE LATCH MECHANISM CAN CAUSE FAILURE OF THE OTHERS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-843X
NASA FMEA #: 102-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 843
ITEM: HARD TORSO SHELL

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-844X
NASA FMEA #: 102-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 844
ITEM: HARD TORSO SHELL

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-845X
NASA FMEA #: 102-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 845
ITEM: HARD TORSO SHELL

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-629
NASA FMEA #: 103-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 629
ITEM: SCYE BEARING ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND THE SOP ARE REDUNDANT TO EACH OTHER AND MUST EACH BE FAILED FUNCTIONALLY FOR LOSS OF LIFE TO RESULT. ADDITIONALLY, THE IOA RECOMMENDS FAILURE OF SCREEN C TO INDICATE THE POSSIBILITY THAT A SINGLE EVENT MAY RESULT IN LOSS OF THE PLSS AND THE SOP FUNCTIONS. THE IOA, THEREFORE, RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-632
NASA FMEA #: 103-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 632
ITEM: ARM BEARING ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-816X
NASA FMEA #: 103-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 816
ITEM: ARM BEARING ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILED ITEM IS NOT STANDBY REDUNDANT BUT ONLY TRANSFERS THE FUNCTION TO A STANDBY REDUNDANT ITEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-865X
NASA FMEA #: 103-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 865
ITEM: ARM BEARING ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86	NASA DATA:
ASSESSMENT ID: EMU-628A	BASELINE []
NASA FMEA #: 103-FM13, FM14	NEW [X]
SUBSYSTEM: EMU	
MDAC ID: 628	
ITEM: UPPER/LOWER ARM RESTRAINT AND BLADDER ASSEMBLY	
LEAD ANALYST: J. WHITMAN	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	[]	(ADD/DELETE)
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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

THE IOA AND THE NASA CRITICALITIES ARE IN AGREEMENT, HOWEVER, THE IOA RECOMMENDS FAILURE OF SCREEN B DUE TO THE ITEM FAILING IS NOT STANDBY REDUNDANT AND ITS FAILURE NOT READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-627A
NASA FMEA #: 103-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 627
ITEM: UPPER/LOWER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND THE SOP TO BE REDUNDANT AND EACH MUST FAIL TO CAUSE LOSS OF LIFE. ADDITIONALLY, THE IOA SUGGESTS FAILING SCREEN C TO REFLECT SCENARIO WHERE A SINGLE EVENT CAN RESULT IN LOSS OF REDUNDANCIES. THE IOA THEREFORE RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-866X
NASA FMEA #: 103-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 866
ITEM: LOWER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-817X
NASA FMEA #: 103-FM17

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 817
ITEM: WRIST DISCONNECT

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT ON SCREEN B.
THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE ITEM THAT
FAILS IS NOT READILY DETECTABLE AND IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-818X
NASA FMEA #: 103-FM18

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 818
ITEM: WRIST DISCONNECT

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-635
NASA FMEA #: 103-FM19

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 635
ITEM: WRIST DISCONNECT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND THE SOP TO BE EXISTING REDUNDANCIES WHICH MUST EACH FAIL TO RESULT IN LOSS OF LIFE. ADDITIONALLY, THE IOA SUGGESTS SCREEN C BE FAILED TO INDICATE POSSIBLE LOSS OF REDUNDANCIES DUE TO A SINGLE EVENT. THE IOA, THEREFORE, RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-871X
NASA FMEA #: 103-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 871
ITEM: SCYE BEARING ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[] *
IOA	[1 /1]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-634
NASA FMEA #: 103-FM20

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 634
ITEM: WRIST DISCONNECT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-633
NASA FMEA #: 103-FM21

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 633
ITEM: WRIST DISCONNECT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-636
NASA FMEA #: 103-FM22

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 636
ITEM: WRIST DISCONNECT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[1 /1]	[NA]	[NA]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-852X
NASA FMEA #: 103-FM23

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 852
ITEM: ARM TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED THE POSSIBILITY OF THE LOCAL HOT/COLD SPOTS CAUSING SIGNIFICANT CREWPERSON DISCOMFORT SUCH THAT THE MISSION COULD BE TERMINATED. THE IOA, THEREFORE, RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-872X
NASA FMEA #: 103-FM2A

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 872
ITEM: SCYE BEARING ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-815X
NASA FMEA #: 103-FM3

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 815
ITEM: SCYE BEARING ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [P] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-630
NASA FMEA #: 103-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 630
ITEM: SCYE BEARING ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-627
NASA FMEA #: 103-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 627
ITEM: UPPER/LOWER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND SOP ARE REDUNDANT TO EACH OTHER AND MUST EACH BE FAILED FUNCTIONALLY FOR LOSS OF LIFE TO RESULT. ADDITIONALLY, THE IOA RECOMMENDS FAILURE OF SCREEN C TO INDICATE THAT A SINGLE EVENT MAY RESULT IN LOSS OF THE PLSS AND THE SOP FUNCTIONS. THE IOA, THEREFORE, RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-628
NASA FMEA #: 103-FM6, FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 628
ITEM: UPPER/LOWER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA CRITICALITIES ARE IN AGREEMENT. THE IOA AGREES WITH THE NASA SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-814X
NASA FMEA #: 103-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 814
ITEM: UPPER ARM RESTRAINT AND BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FABRIC RESTRAINT, UNLIKE THE BLADDER, IS NOT STANDBY REDUNDANT AND IS NOT READILY DETECTABLE WHEN FAILED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-631
NASA FMEA #: 103-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 631
ITEM: ARM BEARING ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA BELIEVES THE PLSS AND THE SOP ARE REDUNDANT TO EACH OTHER AND MUST EACH FAIL IN LOSS OF LIFE TO RESULT. ADDITIONALLY, THE IOA RECOMMENDS FAILURE OF SCREEN C TO INDICATE THE POSSIBILITY THAT A SINGLE EVENT MAY RESULT IN LOSS OF THE PLSS AND SOP FUNCTIONS. THE IOA, THEREFORE, RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-658
NASA FMEA #: 104-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 658
ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERS THE PLSS AND SOP AS REDUNDANT AND THAT EACH MUST FAIL TO RESULT IN LOSS OF LIFE. ADDITIONALLY, TO REFLECT THE SCENARIO WHERE A SINGLE CAUSE CAN LEAD TO LOSS OF BOTH REDUNDANCIES, THE IOA RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-824X
NASA FMEA #: 104-FM10

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 824
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-647
NASA FMEA #: 104-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 647
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT ON SCREEN B.
THE IOA RECOMMENDS FAILURE OF SCREEN B DUE TO THE FAILED ITEM NOT
BEING STANDBY REDUNDANT AND NOT BEING READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-874X
NASA FMEA #: 104-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 874
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-648
NASA FMEA #: 104-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 648
ITEM: WAIST BEARING

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERS THE PLSS AND THE SOP AS REDUNDANCIES WHICH MUST FAIL TO RESULT IN LOSS OF LIFE. BECAUSE A SINGLE EVENT (CAUSE) CAN RESULT IN LOSS OF BOTH REDUNDANCIES, THE IOA RECOMMENDS FAILURE OF SCREEN C AND A 2/1R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-875X
NASA FMEA #: 104-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 875
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/F] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR SCREEN C. THE IOA RECOMMENDS FAILURE OF SCREEN C DUE TO LIKE HARDWARE BEING SUSCEPTIBLE TO A COMMON CAUSE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-876X
NASA FMEA #: 104-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 876
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-877X
NASA FMEA #: 104-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 877
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-878X
NASA FMEA #: 104-FM17

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 878
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA IS IN GENERAL AGREEMENT WITH THE NASA FMEA EXCEPT FOR SCREEN C. IOA BELIEVES A CREDIBLE COMMON CAUSE SUCH AS IMPACT OR CORROSION CAN RESULT IN LOSS OF BOTH THE PIN AND THE SECONDARY RESTRAINT BRACKET.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-879X
NASA FMEA #: 104-FM18

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 879
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B BUT NOT SCREEN C. THE IOA BELIEVES A CREDIBLE COMMON CAUSE CAN FAIL BOTH THE REAR RESTRAINT AND SECONDARY RESTRAINT BRACKET SCREWS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-880X
NASA FMEA #: 104-FM19

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 880
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[]	[X]
COMPARE	[/]	[N]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-873X
NASA FMEA #: 104-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 873
ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B. THE REMAINDER OF THE ANALYSIS IS IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-827X
NASA FMEA #: 104-FM20

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 827
ITEM: WAIST BEARING

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-649
NASA FMEA #: 104-FM21

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 649
ITEM: WAIST BEARING

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-650
NASA FMEA #: 104-FM22

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 650
ITEM: LOWER TORSO RESTRAINT/BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERED THE REDUNDANCY PROVIDED BY THE PLSS AND SOP AND THAT EACH MUST ALSO FAIL FOR LOSS OF LIFE TO OCCUR. BECAUSE A SINGLE CAUSAL EVENT CAN RESULT IN LOSS OF THESE REDUNDANCIES, THE IOA RECOMMENDS FAILURE OF SCREEN C AND A 2/1R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-828X
NASA FMEA #: 104-FM23

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 828
ITEM: LOWER TORSO RESTRAINT/BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT ON SCREEN B.
THE IOA RECOMMENDS FAILURE OF SCREEN B TO REFLECT THE INABILITY
TO DETECT THIS FAILURE FOR AN ITEM WHICH IS NOT STANDBY
REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-651
NASA FMEA #: 104-FM24

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 651
ITEM: LOWER TORSO RESTRAINT/BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT FOR SCREEN B. THE IOA RECOMMENDS SCREEN B BE FAILED BECAUSE THE ITEM ITSELF IS NOT STANDBY REDUNDANT AND BECAUSE THE FAILURE IS NOT READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-651A
NASA FMEA #: 104-FM25

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 651
ITEM: LOWER TORSO RESTRAINT/BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT FOR SCREEN B. THE IOA RECOMMENDS SCREEN B BE FAILED BECAUSE THE ITEM ITSELF IS NOT STANDBY REDUNDANT AND BECAUSE THE FAILURE IS NOT READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-881X
NASA FMEA #: 104-FM26

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 881
ITEM: LOWER TORSO RESTRAINT BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-882X
NASA FMEA #: 104-FM27

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 882
ITEM: LOWER TORSO RESTRAINT BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-883X
NASA FMEA #: 104-FM28

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 883
ITEM: LOWER TORSO RESTRAINT BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-652
NASA FMEA #: 104-FM29

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 652
ITEM: BOOT DISCONNECT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AN THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERS THE PLSS AND SOP AS REDUNDANT FUNCTIONS FOR PRESSURIZATION AND EACH MUST BE LOST TO RESULT IN LOSS OF LIFE WHEN THIS FAILURE OCCURS. BECAUSE A SINGLE EVENT CAN OCCUR WHICH CAN CAUSE LOSS OF ALL REDUNDANCIES, THE IOA RECOMMENDS FAILURE OF SCREEN C AND A 2/1R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-657
NASA FMEA #: 104-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 657
ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

BECAUSE USAGE OF THE "PRYBAR" TO SUPPORT DOFFING A "FAILED MATED" LTA-TO-HUT WOULD DAMAGE THE MECHANISM, THE SUIT WOULD BE UNUSABLE FOR NEXT EVA MISSION. THEREFORE, THE IOA RECOMMENDS A 2/2 CRITICALITY AND INCLUSION OF THIS FAILURE MODE INTO THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-830X
NASA FMEA #: 104-FM30

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 830
ITEM: BOOT DISCONNECT

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILURE IS NOT READILY DETECTABLE AND THE ITEM FAILING IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-867X
NASA FMEA #: 104-FM31

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 867
ITEM: BOOT DISCONNECT

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILURE IS NOT READILY DETECTABLE AND THE ITEM FAILING IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-654
NASA FMEA #: 104-FM32

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 654
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILURE IS NOT READILY DETECTABLE AND THE ITEM FAILING IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-654A
NASA FMEA #: 104-FM33

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 654
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [P] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILURE IS NOT READILY DETECTABLE AND THE ITEM FAILING IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-653
NASA FMEA #: 104-FM34

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 653
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERED THE PLSS AND THE SOP TO BE REDUNDANT FUNCTIONS WHICH MUST ALSO FAIL FUNCTIONALLY TO CAUSE LOSS OF LIFE. THE IOA RECOGNIZES THAT THE FAILURE MUST BE EXTREMELY SEVERE TO CAUSE LOSS OF THESE FUNCTIONS AND TO ADDRESS THE POSSIBILITY THAT A SINGLE EVENT CAN REUSLT IN FUNCTIONAL FAILURE OF ALL REDUNDANCIES, THE IOA RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-833X
NASA FMEA #: 104-FM35

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 833
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-831X
NASA FMEA #: 104-FM36

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 831
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-832X
NASA FMEA #: 104-FM37

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 832
ITEM: PRESSURE BOOT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

IN ADDITION TO LOCALIZED HOT/COLD SPOTS, THE IOA CONSIDERED THE POSSIBILITY THAT AN ABRADED SOLE COULD MAKE USE OF FOOT RESTRAINTS A DIFFICULT OR IMPOSSIBLE TASK. IF UNABLE TO BE USED OR SEVERE DISCOMFORT RESULTS, THE MISSION MAY HAVE TO BE TERMINATED.

THE IOA THEREFORE RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-655
NASA FMEA #: 104-FM38

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 655
ITEM: BOOT SIZING INSERT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-835X
NASA FMEA #: 104-FM39

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 835
ITEM: BOOT SIZING INSERT

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-656
NASA FMEA #: 104-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 656
ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-856X
NASA FMEA #: 104-FM40

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 856
ITEM: WAIST/BRIEF/LTA/BOOT TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERED THE POSSIBLITY THAT LOCAL HOT/COLD SPOTS COULD CAUSE SIGNIFICANT CREWPERSON DISCOMFORT SUCH THAT THE MISSION IS IMPACTED. THE IOA, THEREFORE, RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL FOR THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-884X
NASA FMEA #: 104-FM41

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 884
ITEM: WAIST/BRIEF/LTA/BOOT TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-659
NASA FMEA #: 104-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 659
ITEM: BODY SEAL CLOSURE (LTA SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA ANALYSIS DID NOT ORIGINALLY CONSIDER THE ROTATIONAL REQUIREMENT AS REDUNDANT; HOWEVER, UPON FURTHER REVIEW, THE IOA DOES ACCEPT IT AND AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-885X
NASA FMEA #: 104-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 885
ITEM: DONNING AID HANDLES

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-854X
NASA FMEA #: 104-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 854
ITEM: DONNING AID HANDLES

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-855X
NASA FMEA #: 104-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 855
ITEM: DONNING AID HANDLES

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-853X
NASA FMEA #: 104-FM8

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 853
ITEM: DOFFING LEVER SUBASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-646
NASA FMEA #: 104-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 646
ITEM: WAIST RESTRAINT AND BLADDER

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERS THE PLSS AND THE SOP AS REDUNDANT FUNCTIONS WHICH MUST BE FAILED TO CAUSE LOSS OF LIFE WITH THIS FAILURE MODE. BECAUSE IT IS POSSIBLE A SINGLE EVENT CAN RESULT IN LOSS OF REDUNDANCIES, THE IOA RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-622
NASA FMEA #: 105-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 622
ITEM: HELMET ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

BECAUSE A SEVERE LEAK IN THE HELMET AREA COULD CAUSE CESSATION OF ORAL/NASAL VENTILATION IN ADDITION TO LOSS OF PLSS AND SOP, THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-809X
NASA FMEA #: 105-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 809
ITEM: HELMET ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. UPON FURTHER REVIEW, THE IOA AGREES WITH THE NASA SCREEN B ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-807X
NASA FMEA #: 105-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 807
ITEM: HELMET ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-886X
NASA FMEA #: 105-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 886
ITEM: HELMET ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-808X
NASA FMEA #: 105-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 808
ITEM: HELMET ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-620
NASA FMEA #: 105-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 620
ITEM: COMBINATION PURGE VALVE

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-621
NASA FMEA #: 105-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 621
ITEM: COMBINATION PURGE VALVE

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/1R CRITICALITY TO REFLECT FAILURE OF REDUNDANT PRESSURE CONTROL ELEMENTS IN THIS SCENARIO. ADDITIONALLY, THE IOA ANALYSIS INCORPORATED INTERNAL LEAKAGE INTO THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-637
NASA FMEA #: 106-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 637
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[NA]	[NA]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-642
NASA FMEA #: 106-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 642
ITEM: WRIST DISCONNECT (GLOVE SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERED THE FACT THAT LOSS OF LIFE REQUIRES A COMBINATION OF FAILURES OF HARDWARE AND SOP/PLSS FUNCTIONS. TO IDENTIFY LOSS OF ALL FUNCTIONAL REDUNDANCIES FROM A COMMON CAUSE, THE IOA RECOMMENDS A 2/1Rc ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-822X
NASA FMEA #: 106-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 822
ITEM: WRIST DISCONNECT (GLOVE SIDE)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-823X
NASA FMEA #: 106-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 823
ITEM: WRIST DISCONNECT (GLOVE SIDE)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

FOR THE WORST CASE, LOSS OF TETHERED OBJECTS CAN RESULT IN LOSS OF MISSION ESSENTIAL EQUIPMENT AND, THEREFORE, MISSION TERMINATION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-643
NASA FMEA #: 106-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 643
ITEM: WRIST DISCONNECT (GLOVE SIDE)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-645
NASA FMEA #: 106-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 645
ITEM: PALM RESTRAINT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-644
NASA FMEA #: 106-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 644
ITEM: PALM RESTRAINT

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-859X
NASA FMEA #: 106-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 859
ITEM: GLOVE TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-858X
NASA FMEA #: 106-FM17

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 858
ITEM: GLOVE TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-860X
NASA FMEA #: 106-FM18

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 860
ITEM: GLOVE TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-864X
NASA FMEA #: 106-FM19

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 864
ITEM: MITTEN ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-640A
NASA FMEA #: 106-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 640
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-857X
NASA FMEA #: 106-FM20

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 857
ITEM: COMFORT GLOVE

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-640
NASA FMEA #: 106-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 640
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA AGREE EXCEPT ON SCREEN B. THE IOA RECOMMENDS SCREEN B BE FAILED BECAUSE THIS FAILURE MODE IS NOT SURE TO BE DETECTED AND BECAUSE THE ITEM FAILING IS NOT STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-887X
NASA FMEA #: 106-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 887
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-639
NASA FMEA #: 106-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 639
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[NA]	[NA]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/2 CRITICALITY TO REFLECT POSSIBLE LOSS OF GLOVE DEXTERITY AND CREWMEMBER DISCOMFORT WHICH CAN RESULT IN MISSION TERMINATION. THIS FAILURE MODE SHOULD ALSO THEN BE INCLUDED IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-819X
NASA FMEA #: 106-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 819
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[/NA]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/NA]	[]	[]	[]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DOES NOT CONSIDER NERVE COMPRESSION A FAILURE MODE AND THEREFORE RECOMMENDS ITS DELETION FROM THE FMEA AND CIL. THIS FAILURE AND ITS EFFECTS ARE APPLICABLE TO OPERATIONS PERTAINING TO FIT WHICH ARE TYPICALLY PERFORMED PRE-FLIGHT AND THEREFORE NOT APPLICABLE TO THIS ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-638
NASA FMEA #: 106-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 638
ITEM: RESTRAINT MODIFIED

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[NA]	[NA]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

DUE TO LOSS OF GLOVE FUNCTION WHICH MAY BE REQUIRED FOR MISSION SUCCESS, THE IOA RECOMMENDS THIS FAILURE MODE CRITICLAITY TO BE A 2/2 AND THAT THE FAILURE MODE BE INCLUDED IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-641
NASA FMEA #: 106-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 641
ITEM: BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. THE IOA CONSIDERS THE PLSS AND SOP AS REDUNDANCIES WHICH MUST ALSO BE FAILED TO RESULT IN LOSS OF LIFE. TO REFLECT A CAUSAL EVENT WHICH MAY ALSO RESULT IN LOSS OF REDUNDANCIES AND THEREBY LOSS OF LIFE, THE IOA RECOMMENDS A 2/1Rc CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-821X
NASA FMEA #: 106-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 821
ITEM: BLADDER ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-888X
NASA FMEA #: 107-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 888
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA RECOMMENDS A 2/2 BECAUSE OF RESULTANT POOR LCVG FIT AND
DEGRADED COOLING. CONSISTENCY WITH NASA FMEAs 107-FM2 AND FM3
ALSO RESULTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-664
NASA FMEA #: 107-FM10

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 664
ITEM: VENT MANIFOLD AND DUCTS

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-837X
NASA FMEA #: 107-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 837
ITEM: VENT MANIFOLD AND DUCTS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-838X
NASA FMEA #: 107-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 838
ITEM: VENT MANIFOLD AND DUCTS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-665
NASA FMEA #: 107-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 665
ITEM: VENT MANIFOLD AND DUCTS

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-839X
NASA FMEA #: 107-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 839
ITEM: MULTIPLE CONNECTOR (LCVG HALF)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-667
NASA FMEA #: 107-FM15

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 667
ITEM: MULTIUPLE CONNECTOR (LCVG HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[X] *
IOA	[3 / 3]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-668
NASA FMEA #: 107-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 668
ITEM: MULTIUPLE CONNECTOR (LCVG HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[/]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN C. THE IOA AND NASA ARE IN AGREEMENT FOR THE REMAINDER OF THE ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-666
NASA FMEA #: 107-FM17

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 666
ITEM: MULTIUPLE CONNECTOR (LCVG HALF)

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-660A
NASA FMEA #: 107-FM2

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 660
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-660
NASA FMEA #: 107-FM3

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 660
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-661
NASA FMEA #: 107-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 661
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-836X
NASA FMEA #: 107-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 836
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-662
NASA FMEA #: 107-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 662
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-861X
NASA FMEA #: 107-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 861
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-862X
NASA FMEA #: 107-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 862
ITEM: RESTRAINT ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-663
NASA FMEA #: 107-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 663
ITEM: LINER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-810X
NASA FMEA #: 108-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 810
ITEM: EVVA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-863X
NASA FMEA #: 108-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 863
ITEM: EVVA TMG

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-889X
NASA FMEA #: 108-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 889
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-625
NASA FMEA #: 108-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 625
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-890X
NASA FMEA #: 108-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 890
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-811X
NASA FMEA #: 108-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 811
ITEM: EVVA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

TO REFLECT MISSION IMPACT OF VISOR FAILURE IN CONCERT WITH THIS FAILURE, THE IOA RECOMMENDS A 3/2R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-812X
NASA FMEA #: 108-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 812
ITEM: EVVA

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [P] [] [D]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B REGARDING WHICH THE NASA ANALYSIS IS CONTRADICTORY IN THAT IT AFFIRMS DETECTABILITY IN FLIGHT BUT FAILS SCREEN B. THE IOA RECOMMENDS PASSAGE OF SCREEN B DUE TO SENSORY CAPABILITY TO OBSERVE LOOSE

LIGHTS OR "LOOSE" MOVEMENT ON THE HELMET. (NOTE: THIS CHANGE WAS AGREED TO BE THE NASA SSM).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-626
NASA FMEA #: 108-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 626
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[P]	[P]	[P]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA BELIEVES THE ASSIGNED NASA CRITICALITY IS A TYPOGRAPHICAL ERROR DUE TO THE EFFECTS COLUMN INDICATING MISSION TERMINATION MAY RESULT FROM THIS FAILURE MODE. THE IOA RECOMMENDS A 2/2 CRITICALITY AND INCLUSION IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-623
NASA FMEA #: 108-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 623
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT; HOWEVER, THE NASA FMEA SHOULD ADDRESS FAILED OPEN SEPARATELY FROM FAILED CLOSED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-624
NASA FMEA #: 108-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 624
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /3]	[]	[]	[]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT BECAUSE THE NASA INCLUDED BOTH FAILED OPEN AND FAILED CLOSED IN A SINGLE FMEA. THE IOA BELIEVES A FAILED CLOSED SUN VISOR WILL NOT IMPACT A MISSION AND THEREFORE RECOMMENDS A 3/3 CRITICALITY FOR THIS SPECIFIC FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-891X
NASA FMEA #: 108-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 891
ITEM: EXTRAVEHICULAR VISOR ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-669
NASA FMEA #: 110-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 669
ITEM: BITE VALVE ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /2]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-670
NASA FMEA #: 110-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 670
ITEM: BITE VALVE ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-670A
NASA FMEA #: 110-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 670
ITEM: BITE VALVE ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-671
NASA FMEA #: 110-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 671
ITEM: BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-672
NASA FMEA #: 110-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 672
ITEM: BLADDER ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/2 CRITICALITY TO REFLECT WORST CASE SCENARIO WHERE IDB COULD POSITION ITSELF WHERE DISCOMFORT IS EXCESSIVE (MOBILITY OF CREWPERSON'S HEAD OR VISION CAN BE IMPAIRED) AND MISSION TERMINATION RESULTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-674
NASA FMEA #: 110-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 674
ITEM: INLET VALVE ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-673
NASA FMEA #: 110-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 673
ITEM: INLET VALVE ASSEMBLY

LEAD ANALYST: J. WHITMAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-247
NASA FMEA #: 111-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 247
ITEM: PRIMARY OXYGEN BOTTLES (ITEM 111)-QTY-2

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-246
NASA FMEA #: 111-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 246
ITEM: PRIMARY OXYGEN BOTTLES (ITEM 111)-QTY-2

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-249
NASA FMEA #: 112-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 249
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-252
NASA FMEA #: 112-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 252
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DISAGREES WITH THE NASA FINDINGS BECAUSE THE FAILED FULL HIGH FAILURE MODE, WHEN DETECTED DURING THE EVA, WILL RESULT IN IMMEDIATE MISSION TERMINATION. ALTHOUGH THE DETECTION TECHNIQUE IS VIA A STATUS CHECK THE IOA CANNOT CONSIDER THAT CHECK A REDUNDANT FUNCTION TO THIS SENSOR. THE IOA AGREES WITH THE CAUSES IDENTIFIED BY THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-250
NASA FMEA #: 112-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 250
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-251
NASA FMEA #: 112-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 251
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREENS; HOWEVER, THE IOA RECOMMENDS A 2/1R CRITICALITY DUE TO A WORST CASE SCENARIO WHERE THE PRIMARY OXYGEN IS PREMATURELY DEPLETED AND THE SOP IS FAILED. THIS ALSO CONSIDERS THAT ALTHOUGH THE FAILURE IS READILY DETECTABLE IN THE AIRLOCK, IT IS NOT DETECTABLE DURING EVA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-253
NASA FMEA #: 112-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 253
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[P]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-254
NASA FMEA #: 112-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 254
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-248
NASA FMEA #: 112-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 248
ITEM: PRIMARY O2 PRESSURE SENSOR (ITEM 112)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-227
NASA FMEA #: 113A-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 227
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-228
NASA FMEA #: 113A-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 228
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-222
NASA FMEA #: 113A-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 222
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DISAGREES WITH THE NASA FINDINGS. THE IOA RECOMMENDS A 2/1R CRITICALITY TO REFLECT SCENARIO OF LEAK WITH CONCURRENT CHECK VALVE AND SOP FAILURES. SCREENS SHOULD ALL BE PASSED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-223
NASA FMEA #: 113A-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 223
ITEM: CHECK VALVE AND FILTER (ITEM 113A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-230
NASA FMEA #: 113B-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 230
ITEM: ADJUSTABLE ORIFICE (ITEM 113B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

C - 4/

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-231
NASA FMEA #: 113B-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 231
ITEM: ADJUSTABLE ORIFICE (ITEM 113B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-229
NASA FMEA #: 113B-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 229
ITEM: ADJUSTABLE ORIFICE (ITEM 113B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-234
NASA FMEA #: 113C-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 234
ITEM: ON/OFF VALVE (ITEM 113C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-233
NASA FMEA #: 113C-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 233
ITEM: ON/OFF VALVE (ITEM 113C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /2]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT ON SCREEN ASSIGNMENTS AND HARDWARE CRITICALITY; HOWEVER, THE FUNCTIONAL CRITICALITY IS RECOMMENDED TO BE A "2". THE IOA MAKES THIS SUGGESTION DUE TO THE VALVE BEING MECHANICALLY POSITIONED "OPEN" PRE-EVA AND THEREFORE NOT CAPABLE OF THIS FAILURE WITHOUT OPERATOR ERROR (WHICH IS ADVERSE TO GROUNDRULES) DURING THE EVA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-232
NASA FMEA #: 113C-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 232
ITEM: ON/OFF VALVE (ITEM 113C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-236
NASA FMEA #: 113D-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 236
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-237
NASA FMEA #: 113D-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 237
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-238
NASA FMEA #: 113D-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 238
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN DISAGREEMENT IN THAT NASA HAS BOUNDED THIS FAILURE MODE SUCH THAT IT DOES NOT REPRESENT THE WORST CASE SCENARIO. ADDITIONALLY, BY SUCH BOUNDS THIS FAILURE MODE IS VERY SIMILAR TO 113D-FM7 REGARDING OSCILLATING OUTPUT. THE IOA, THEREFORE, RECOMMENDS A 2/1R CRITICALITY, PASSAGE OF ALL SCREENS, AND INCLUSION IN THE CIL FOR THIS FAILURE MODE WHICH SHOULD ALSO NOT BE BOUNDED. THE FAILURE MODE SHOULD ALSO BE BROKEN INTO TWO-DRIFT HIGH AND DRIFT LOW.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-239
NASA FMEA #: 113D-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 239
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [P] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN DISAGREEMENT IN THAT NASA HAS BOUNDED THIS FAILURE MODE SUCH THAT IT DOES NOT REPRESENT THE WORST CASE SCENARIO. ADDITIONALLY, BY SUCH BOUNDS THIS FAILURE MODE IS VERY SIMILAR TO 113D-FM7 REGARDING OSCILLATING OUTPUT. THE IOA, THEREFORE, RECOMMENDS A 2/1R CRITICALITY, PASSAGE OF ALL SCREENS, AND INCLUSION IN THE CIL FOR THIS FAILURE MODE WHICH SHOULD ALSO NOT BE BOUNDED. THE FAILURE MODE SHOULD ALSO BE BROKEN INTO TWO-DRIFT HIGH AND DRIFT LOW.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-240
NASA FMEA #: 113D-FM5, FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 240
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

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APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-712X
NASA FMEA #: 113D-FM7

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 712
ITEM: PRIMARY REGULATOR (ITEM 113D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-242
NASA FMEA #: 113E-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 242
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-243
NASA FMEA #: 113E-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 243
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN DISAGREEMENT. THE IOA BELIEVES THE PRESSURE LIMITATIONS WITHIN THE NASA FAILURE MODE DO NOT REPRESENT THE WORST CASE SCENARIO. ADDITIONALLY, THE NASA FAILURE MODE IS VERY SIMILAR TO 113E-FM6 FOR OSCILLATING OUTPUT. AS SUCH THE IOA RECOMMENDS A 2/1R CRITICALITY FOR A "REGULATES HIGH" FAILURE MODE, PASSAGE OF ALL SCREENS, AND INCLUSION IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-245
NASA FMEA #: 113E-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 245
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-244
NASA FMEA #: 113E-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 244
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT ON HARDWARE CRITICALITY. HOWEVER, THE IOA RECOMMENDS A "1R" FUNCTIONAL CRITICALITY DUE TO POSSIBLE CREWPERSON LOSS IF SOP ALSO FAILS DURING AN EFFORT TO PROVIDE COOLING AND DEFOG CAPABILITY. ALL SCREENS SHOULD BE PASSED. ADDITIONALLY, THE NASA FAILURE MODE BOUNDS THE FAILURE BY PRESSURE RANGE SUCH THAT THE WORST CASE SCENARIO IS NOT FULLY PRESENTED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-241
NASA FMEA #: 113E-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 241
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-713X
NASA FMEA #: 113E-FM6

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 713
ITEM: H2O REGULATOR (ITEM 113E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-209
NASA FMEA #: 114-FM1, FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 209
ITEM: PRESSURE SUIT SENSOR (ITEM 114)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT ON HARDWARE CRITICALITY AND SCREEN ASSIGNMENTS. HOWEVER, THE IOA RECOMMENDS A "2R" FUNCTIONAL CRITICALITY BECAUSE THE SOP IS NOT SEEN AS REDUNDANT TO THIS SENSOR.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-210
NASA FMEA #: 114-FM3, FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 210
ITEM: PRESSURE SUIT SENSOR (ITEM 114)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 2R]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA FINDING OF A 2/2 CRITICALITY.
HOWEVER, THE NASA ALSO PLACED A 3/1R CRITICALITY ON EVA
OPERATIONS REGARDING WHICH THE IOA RECOMMENDS A 3/2R CRITICALITY
DUE TO THE SOP NOT BEING CONSIDERED REDUNDANT TO THIS SENSOR.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-212
NASA FMEA #: 114-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 212
ITEM: PRESSURE SUIT SENSOR (ITEM 114)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-211
NASA FMEA #: 114-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 211
ITEM: PRESSURE SUIT SENSOR (ITEM 114)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-752X
NASA FMEA #: 114-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 752
ITEM: PRESSURE SUIT SENSOR

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[X] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

LOSS OF PRESSURE READ OUT REDUNDANCY SHOULD NOT RESULT IN LOSS OF LIFT. IF DETECTED DUE TO A SUBSEQUENT FAILURE, MISSION TERMINATION WOULD RESULT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-259
NASA FMEA #: 115-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 259
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-268
NASA FMEA #: 115-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 268
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-270
NASA FMEA #: 115-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 270
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[N /]	[]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONCURS WITH THE NASA FINDINGS AND ASSIGNMENTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-269
NASA FMEA #: 115-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 269
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /3]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-257
NASA FMEA #: 115-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 257
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DISAGREES WITH THE NASA CRITICALITY ASSIGNMENT. THE IOA RECOMMENDS A 3/1R TO REFLECT POSSIBLE CREWPERSON LOSS FOR CONCURRENT FAILURES OF 113A AND OXYGEN SYSTEM COMPONENTS. THIS ALSO ENSURES CONSISTENCY WITH NASA FAILURE MODE 113A-FM2.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-258
NASA FMEA #: 115-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 258
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-258A
NASA FMEA #: 115-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 258
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-255
NASA FMEA #: 115-FM16

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 255
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA AGREES WITH THE
NASA SCREEN B ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-714X
NASA FMEA #: 115-FM17

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 714
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-256
NASA FMEA #: 115-FM18

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 256
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA CRITICALITY&a3528HASSIGNMENTS IN
FULL AGREEMENT WITH THE SCREEN ASSIGNMENTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-715X
NASA FMEA #: 115-FM19

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 715
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA CRITICALITY AND IS IN FULL AGREEMENT
ON SCREEN ASSIGNMENTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-260
NASA FMEA #: 115-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 260
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

NASASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-753X
NASA FMEA #: 115-FM20

DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 753
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-754X
NASA FMEA #: 115-FM21

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 754
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[F]	[X]
COMPARE	[N /]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THERE ARE TEN (10) MOUNTING SCREWS. SEVEN ARE REQUIRED TO MAINTAIN INTEGRITY. THEREFORE, 4 SCREWS MUST BE LOST TO LOSE INTEGRITY. SINCE NO ONCE SECOND FAILURE CAN RESULT IN LOSS OF LIFE THE HARDWARE CRITICALITY SHOULD BE A "3". ALSO, BECAUSE ALL THE SCREWS ARE LIKE HARDWARE THEY ARE SUSCEPTIBLE TO COMMON CAUSE FAILURES AND SCREEN C SHOULD BE FAILED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-261
NASA FMEA #: 115-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 261
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-262
NASA FMEA #: 115-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 262
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-265
NASA FMEA #: 115-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 265
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA AGREES WITH THE
NASA SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-266
NASA FMEA #: 115-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 266
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-263
NASA FMEA #: 115-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 263
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-264
NASA FMEA #: 115-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 264
ITEM: SHEAR PLATE ASSEMBLY (ITEM 115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-267
NASA FMEA #: 115-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 267
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-271
NASA FMEA #: 116-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 271
ITEM: EVA POSITION SWITCH (ITEM 116)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA ALSO NOW
CONSIDERS THIS FAILURE MODE READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-272
NASA FMEA #: 116-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 272
ITEM: EVA POSITION SWITCH (ITEM 116)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. ADDITIONALLY THE IOA NOW
CONSIDERS THIS FAILURE MODE READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-275
NASA FMEA #: 120A-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 275
ITEM: BLEED ORIFICE (ITEM 120A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /2R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B ASSIGNMENT AND IS IN AGREEMENT WITH THE SCREEN A AND C ASSIGNMENTS. THE IOA RECOMMENDS A "3/2R" TO ACCOUNT FOR FAILURE OF THE REDUNDANT 120B RELIEF VALVES SUCH THAT THE WATER TANKS CANNOT BE SERVICED. THE IOA DOES NOT CONSIDER THE SOP AS REDUNDANT TO THIS ITEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-274
NASA FMEA #: 120A-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 274
ITEM: BLEED ORIFICE (ITEM 120A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B,
REGARDING WHICH THE IOA NOW CONCURS WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-273
NASA FMEA #: 120A-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 273
ITEM: BLEED ORIFICE (ITEM 120A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-276
NASA FMEA #: 120B-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 276
ITEM: DUAL MODE RELIEF VALVE (ITEM 120B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONCURS WITH THE NASA SCREEN B ASSIGNMENT AND IS IN FULL AGREEMENT WITH THE REMAINING ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-277
NASA FMEA #: 120B-FM2, FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 277
ITEM: DUAL MODE RELIEF VALVE (ITEM 120B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-279
NASA FMEA #: 120B-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 279
ITEM: DUAL MODE RELIEF VALVE (ITEM 120B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [P] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B ASSIGNMENT DUE TO STANDBY
REDUNDANCY GROUND RULES AND IS IN FULL AGREEMENT WITH THE NASA
ANALYSIS CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-278
NASA FMEA #: 120B-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 278
ITEM: DUAL MODE RELIEF VALVE (ITEM 120B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[NA]	[P]	[A]
(ADD/DELETE)				

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA AGREE ON HARDWARE CRITICALITY; HOWEVER, REGARDING FUNCTIONAL CRITICALITY, THE IOA RECOMMENDS A "2R" TO REFLECT THE MISSION IMPACT RESULTING FROM REDUNDANT FUNCTION FAILURE. ADDITIONALLY, THE IOA RECOMMENDS SCREEN ASSIGNMENTS AS SHOWN ABOVE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-282
NASA FMEA #: 120C-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 282
ITEM: FEEDWATER CHECK VALVE (ITEM 120C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-281
NASA FMEA #: 120C-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 281
ITEM: FEEDWATER CHECK VALVE (ITEM 120C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA CONCURS WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-280
NASA FMEA #: 120C-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 280
ITEM: FEEDWATER CHECK VALVE (ITEM 120C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-201
NASA FMEA #: 121-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 201
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA SCREEN ASSIGNMENTS ARE IN AGREEMENT.
ADDITIONALYY, THE IOA AGREES WITH THE NASA HARDWARE AND
FUNCTIONAL CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-199
NASA FMEA #: 121-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 199
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-198
NASA FMEA #: 121-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 198
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-200
NASA FMEA #: 121-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 200
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-197
NASA FMEA #: 121-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 197
ITEM: CHECK VALVE AND VENT FLOW SENSOR (ITEM 121)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-204
NASA FMEA #: 122-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 204
ITEM: CO2 TRANSDUCER (ITEM 122)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-205
NASA FMEA #: 122-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 205
ITEM: CO2 TRANSDUCER (ITEM 122)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR HARDWARE CRITICALITY ASSIGNMENT. THE IOA NOW AGREES WITH THE HARDWARE CRITICALITY DEFINED BY THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-716X
NASA FMEA #: 122-FM3

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 716
ITEM: CO2 TRANSDUCER (ITEM 122)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-206
NASA FMEA #: 122-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 206
ITEM: CO2 TRANSDUCER (ITEM 122)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA ALSO FULLY AGREES WITH THE NASA SCREEN B ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-203
NASA FMEA #: 122-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 203
ITEM: CO2 TRANSDUCER (ITEM 122)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-185
NASA FMEA #: 123-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 185
ITEM: FAN (ITEM 123A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-187
NASA FMEA #: 123-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 187
ITEM: BRUSHLESS MOTOR (ITEM 123B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

ALTHOUGH THE IOA AND THE NASA ARE IN GENERAL AGREEMENT, IT IS
RECOMMENDED THAT THE "FAILED OFF" FAILURE MODE BE SEPARATED FROM
THE DROPS IN SPEED FAILURE MODE TO ENSURE CLARITY OF THE
ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-188
NASA FMEA #: 123-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 188
ITEM: BRUSHLESS MOTOR (ITEM 123B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT; HOWEVER, THE IOA WOULD RECOMMEND SEPARATION OF THIS FAILURE MODE (LOW SPEED) FROM THE MOTOR STOPS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-190
NASA FMEA #: 123-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 190
ITEM: BRUSHLESS MOTOR (ITEM 123B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

a3672HADEQUATE

INADEQUATE []
[]

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-751X
NASA FMEA #: 123-FM12

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 751
ITEM: FAN/SEPARATOR/PUMP/MOTOR ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-717X
NASA FMEA #: 123-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 717
ITEM: FAN (ITEM 123A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[1 /1]	[F]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
UPON FURTHER REVIEW, THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-184
NASA FMEA #: 123-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 184
ITEM: FAN (ITEM 123A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-178
NASA FMEA #: 123-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 178
ITEM: ROTARY H2O SEPARATOR (ITEM 123 B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA CRITICALITY ANALYSIS AND SCREEN A ASSIGNMENT ARE IN AGREEMENT. HOWEVER, THE IOA BELIEVES WATER CARRYOVER INTO THE HELMET AND SSA IS AN UNDESIRABLE EFFECT AND SHOULD NOT BE CONSIDERED A DETECTION TECHNIQUE. AS SUCH THE IOA RECOMMENDS FAILURE OF SCREEN B. ADDITIONALLY, BECAUSE WATER MAY FREEZE IN EITHER OR BOTH PURGE VALVES AND CAUSE LOSS OF REDUNDANCY THE IOA RECOMMENDS FAILURE OF SCREEN C.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-182
NASA FMEA #: 123-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 182
ITEM: WATER PUMP (ITEM 123C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
-----------	-------	-------	-------	-----

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

WITH THE EXCEPTION OF FUNCTIONAL CRITICALITY, THE IOA AND THE NASA ARE IN AGREEMENT. BECAUSE THE IOA CONSIDERS VENT FLOW AND SOP OPERATION AS REDUNDANT FUNCITONS, A FUNCTIONAL CRITICALITY OF "1R" IS RECOMMENDED WITH PASSAGE OF ALL SCREENS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-179
NASA FMEA #: 123-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 179
ITEM: ROTARY H2O SEPARATOR (ITEM 123 B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. (ALSO REFERENCE MDAC ID-181)

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-181
NASA FMEA #: 123-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 181
ITEM: WATER PUMP (ITEM 123C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT (REF. MDAC ID-179).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-183
NASA FMEA #: 123-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 183
ITEM: WATER PUMP (ITEM 123C)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT; HOWEVER, THE IOA SUGGESTS THE EFFECTS BE MODIFIED TO REFLECT POSSIBLE MOTOR FAILURE DUE TO INTERNAL H2O LEAKAGE. ADDITIONALLY, THE IOA RECOMMENDS SCREEN B BE FAILED BECAUSE WATER CARRYOVER IS AN UNDESIRABLE EFFECT WHICH SHOULD NOT BE CONSIDERED A DETECTION TECHNIQUE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-189
NASA FMEA #: 123-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 189
ITEM: BRUSHLESS MOTOR (ITEM 123B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
(ADD/DELETE)				

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE NASA SCENARIO DID NOT ADDRESS THE POSSIBILITY OF EXCESSIVE POWER CONSUMPTION NEAR MISSION END. THIS CAN RESULT IN POWER LOSS AND REQUIRED SOP USAGE. IF THE SOP FAILS, THE CREWPERSON CAN BE LOST. THE IOA THEREFORE RECOMMENDS A 2/1R CRITICALITY AND PASSAGE OF ALL SCREENS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-180
NASA FMEA #: 123-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 180
ITEM: ROTARY H2O SEPARATOR (ITEM 123 B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[F]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR FUNCTIONAL CRITICALITY. TO REFLECT THE WORST CASE SCENARIO AND LOSS OF REDUNDANT FUNCTIONS (e.g. SOP), THE IOA RECOMMENDS A "1R" FUNCTIONAL CRITICALITY AND FAILURE OF SCREEN C (REFLECTS POSSIBLE ICING PURGE VALVES). (ALSO REFERENCE MDAC ASSESSMENT ID EMU-186).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-186
NASA FMEA #: 123-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 186
ITEM: BRUSHLESS MOTOR (ITEM 123B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR FUNCTIONAL CRITICALITY. TO REFLECT THE WORST CASE SCENARIO (WHICH CAN INCLUDE H2O CARRYOVER FROM THE FAN SEPARATOR) THE IOA RECOMMENDS A "1R" CRITICALITY. (ALSO REFERENCE MDAC ID EMU-180).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-147
NASA FMEA #: 125-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 147
ITEM: PITOT ACTUATED VALVE (ITEM 125)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT ON THE SCREEN A AND C ASSIGNMENTS; HOWEVER, THE INITIAL IOA CRITICALITY ASSIGNMENT DID NOT AGREE WITH THAT OF NASA. AFTER FURTHER REVIEW, THE IOA NEW AGREES WITH THE NASA CRITICALITY BUT WOULD MODIFY THE NASA SCENARIO TO INCLUDE POSSIBLE BLOCKAGE OF THE SEPARATOR PITOT OR THE 134 VALVE FAILING CLOSED. ADDITIONALLY, BECAUSE THE ITEM IS AN ACTIVE COMPONENT DURING THE MISSION, THE IOA RECOMMENDS FAILURE OF SCREEN B AND INCLUSION IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-148
NASA FMEA #: 125-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 148
ITEM: PITOT ACTUATED VALVE (ITEM 125)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

EXCEPT FOR SCREEN B, THE IOA AND THE NASA ARE IN AGREEMENT ON CRITICALITY AND SCREEN ASSIGNMENTS. THE IOA ALSO DOES NOT FIND THE FAILURE READILY DETECTABLE SINCE WATER CARRYOVER IS AN UNDESIRABLE EFFECT WHICH SHOULD NOT BE CONSIDERED A DETECTION TECHNIQUE. THE IOA ALSO RECOMMENDS REVIEW OF THE EFFECTS FOR THE POSSIBLE ADDITION OF EFFECTS RESULTANT FROM LOSS OF FAN SEPARATOR FUNCTION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-149
NASA FMEA #: 125-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 149
ITEM: PITOT ACTUATED VALVE (ITEM 125)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86	NASA DATA:
ASSESSMENT ID: EMU-150	BASELINE []
NASA FMEA #: 125-FM4	NEW [X]

SUBSYSTEM: EMU
MDAC ID: 150
ITEM: PITOT ACTUATED VALVE (ITEM 125)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS		CIL ITEM
		A B C		
NASA	[2 /2]	[] [] []		[X] *
IOA	[2 /1R]	[P] [F] [P]		[X]
COMPARE	[/N]	[N] [N] [N]		[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[]	
				(ADD/DELETE)	

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
 ASSESSMENT ID: EMU-151
 NASA FMEA #: 125-FM4

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EMU
 MDAC ID: 151
 ITEM: PITOT ACTUATED VALVE (ITEM 125)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-208
NASA FMEA #: 126-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 208
ITEM: FILTER AND ORIFICE (ITEM 126)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT FOR HARDWARE CRITICALITY ASSIGNMENT. THE IOA NOW CONCURS WITH THE NASA HARDWARE CRITICALITY ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-207
NASA FMEA #: 126-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 207
ITEM: FILTER AND ORIFICE (ITEM 126)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-157
NASA FMEA #: 127-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 157
ITEM: PUMP INLET FILTER (ITEM 127)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

FOR THE WORST CASE EFFECT, PUMP FAILURE, THE IOA BELIEVES THE FUNCTIONAL CRITICALITY SHOULD BE A "1R" WHEN COMBINED WITH LOSS OF REDUNDANT COOLING FUNCTIONS. THE IOA ALSO RECOMMENDS FAILURE OF SCREEN B DUE TO THE FAILURE NOT BEING READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-156
NASA FMEA #: 127-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 156
ITEM: PUMP INLET FILTER (ITEM 127)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[F]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A CRITICALITY OF 2/1R WHEN LOSS OF REDUNDANT FUNCTIONS (SOP AND VENT LOOP COOLING) ARE ALSO CONSIDERED IN CONJUNCTION WITH THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-155
NASA FMEA #: 127-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 155
ITEM: PUMP INLET FILTER (ITEM 127)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-153
NASA FMEA #: 128-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 153
ITEM: CHECK VALVE AND HOUSING (ITEM 128)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-154
NASA FMEA #: 128-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 154
ITEM: CHECK VALVE AND HOUSING (ITEM 128)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
-----------	-------	-------	-------	-----

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

WITH THE EXCEPTION OF FUNCTIONAL CRITICALITY, THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA RECOMMENDS A FUNCTIONAL CRITICALITY OF "1R" DUE TO POSSIBLE LOSS OF LIFE RESULTING WHEN THE REDUNDANT FUNCTIONS (SOP AND PLSS VENT COOLING) ARE ALSO FAILED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-152
NASA FMEA #: 128-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 152
ITEM: CHECK VALVE AND HOUSING (ITEM 128)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-100
NASA FMEA #: 131/162-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 100
ITEM: PRIMARY H2O TANK 1 (ITEM 131)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE NASA FMEA DID NOT FULLY EXTRAPOLATE THE EFFECTS OF THE FAILURE - LOSS OF COOLING AND WATER IN THE VENT LOOP. ALSO, NASA DID NOT CONSIDER THE SOP AS PROVIDING A REDUNDANT FUNCTION AND, THEREFORE, DID NOT FAIL IT IN ARRIVING AT THE FUNCTIONAL CRITICALITY. THE IOA BELIEVES THE SOP DOES PROVIDE UNLIKE REDUNDANCY AND THAT THE CRITICALITY SHOULD BE 2/1R.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-103
NASA FMEA #: 131/162-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 103
ITEM: PRIMARY H2O TANK 1 (ITEM 162)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE NASA FMEA DID NOT FULLY EXTRAPOLATE THE EFFECTS OF THE FAILURE - LOSS OF COOLING AND WATER IN THE VENT LOOP. ALSO, NASA DID NOT CONSIDER THE SOP AS PROVIDING A REDUNDANT FUNCTION AND, THEREFORE, DID NOT FAIL IT IN ARRIVING AT THE FUNCTIONAL ADDITIONALLY, THE IOA AGREES WITH THE NASA SCREEN "B".

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-102
NASA FMEA #: 131/162-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 102
ITEM: PRIMARY H2O TANK 1 (ITEM 131)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-105
NASA FMEA #: 131/162-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 105
ITEM: PRIMARY H2O TANK 1 (ITEM 162)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-101
NASA FMEA #: 131/162-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 101
ITEM: PRIMARY H2O TANK 1 (ITEM 131)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-104
NASA FMEA #: 131/162-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 104
ITEM: PRIMARY H2O TANK 1 (ITEM 162)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87	NASA DATA:
ASSESSMENT ID: EMU-719X	BASELINE []
NASA FMEA #: 131/162-FM4	NEW []
SUBSYSTEM: EMU	
MDAC ID: 719	
ITEM: PRIMARY WATER TANK ASSEMBLY (ITEM 131/162)	
LEAD ANALYST: G. RAFFAELLI	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS		CIL ITEM
		A B C		
NASA	[3 /1R]	[P] [F] [P]		[X] *
IOA	[3 /1R]	[P] [F] [P]		[X]
COMPARE	[/]	[] [] []		[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	(ADD/DELETE)
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* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-718X
NASA FMEA #: 131/162-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 718
ITEM: PRIMARY H2O TANK ASSEMBLY (ITEM 131/162)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA IS IN AGREEMENT WITH THE NASA EXCEPT FOR HARDWARE CRITICALITY. THE IOA RECOMMENDS A "3/1R" BECAUSE A MINIMUM OF 3 REDUNDANT ITEM FAILURES MUST OCCUR TO RESULT IN LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87	NASA DATA:
ASSESSMENT ID: EMU-720X	BASELINE []
NASA FMEA #: 131/162-FM6	NEW []
SUBSYSTEM: EMU	
MDAC ID: 720	
ITEM: PRIMARY WATER TANK ASSEMBLY (ITEM 131/162)	
LEAD ANALYST: G. RAFFAELLI	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS		CIL ITEM
		A	B	C
NASA	[2 /1R]	[P]	[P]	[P]
IOA	[2 /1R]	[P]	[P]	[F]
COMPARE	[/]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	[]
					(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT. THE IOA, UPON FURTHER REVIEW, AGREES WITH PASSAGE OF SCREEN C.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-284
NASA FMEA #: 132A-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 284
ITEM: FDW SUPPLY PRESSURE SENSOR-02 SIDE (ITEM 132A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /2R]	[P]	[P]	[P]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DOES NOT CONSIDER THE SINGLE FAILURE A MISSION IMPACT
UNLESS REDUNDANCY IS ALSO LOST. THE IOA THEREFORE RECOMMENDS A
3/2R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-285
NASA FMEA #: 132A-FM2, FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 285
ITEM: FDW SUPPLY PRESSURE SENSOR-O2 SIDE (ITEM 132A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 2R]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-286
NASA FMEA #: 132A-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 286
ITEM: FDW SUPPLY PRESSURE SENSOR-O2 SIDE (ITEM 132A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NAA SCREEN B AND DEFINED EFFECTS. THE
IOA AND THE NASA ARE IN AGREEMENT ON THE REMAINDER OF THE
ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-283
NASA FMEA #: 132A-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 283
ITEM: FDW SUPPLY PRESSURE SENSOR-O2 SIDE (ITEM 132A)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

EXCEPT FOR SCREEN B, THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA NOW AGREES WITH THE NASA SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-109
NASA FMEA #: 132B-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 109
ITEM: FDW SUPPLY PRESSURE SENSOR (ITEM 132B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 2R]	[P]	[F]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 2R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE SENSOR FAILURE (BIASED OR FAILED HIGH) WILL HAVE NO IMMEDIATE IMPACT TO THE CREWMEMBER, EMU, OR MISSION. THE IOA RECOGNIZES THAT THE LOSS OF THIS SENSOR WILL NOT PERMIT THE CREWPERSON TO DETECT RESERVE WATER SUPPLY USEAGE, HOWEVER THE EMU IS NOMINALLY SUPPLIED SUFFICIENT WATER FOR A STANDARD DURATION EVA AND THE ELAPSED LINE DURATION IS AVAILABLE TO THE CREWPERSON. DOWNSTREAM PRESSURE TO THE SUBLIMATOR IS ALSO MONITORED TO ENSURE ACCEPTABLE SUPPLY PRESSURE. THE ADDITIONAL FAILURES OF TIME AND DOWNSTREAM PRESSURES WILL RESULT IN MISSION TERMINATION. THE IOA ALSO RECOMMENDS SCREEN B BE FAILED DUE TO A POSSIBLE FAILURE OF THE SENSOR AT ITS NOMINAL VALUE JUST PRIOR TO RESERVE TANK USEGE. (NOTE: NASA HAS AN ADDITIONAL CRITIALITY OF 3/1Rb ASSIGNED THIS FAILURE).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-110
NASA FMEA #: 132B-FM2, FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 110
ITEM: FDW SUPPLY PRESSUR SENSOR (ITEM 132B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 2R]	[P]	[F]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

A BIASED LOW OR FAILED LOW SENSOR CAN RESULT IN A NUISANCE ALARM AND PREVENT TO CREWMEMBER FROM DETECTING ACTUAL RESERVE TO TANK USEAGE. THE CREWPERSON WOULD ALSO BE REQUIRED TO JUDGE WHETHER THIS VALUE IS INDICATIVE OF ANOTHER FAILURE. THE IOA THEREFORE AGREES WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-112
NASA FMEA #: 132B-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 112
ITEM: FDW SUPPLY PRESSURE SENSOR (ITEM 132B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA CRITICALITY AND SCREEN ASSIGNMENTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-111
NASA FMEA #: 132B-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 111
ITEM: FDW SUPPLY PRESSURE SENSOR (ITEM 132B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-163
NASA FMEA #: 134-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 163
VALVEEM: CONDENSATE H2O RELIEF (ITEM 134)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA HARDWARE CRITICALITIES AND SCREEN A/B ASSIGNMENTS ARE IN AGREEMENT. UPON FURTHER REVIEW OF THE FUNCTIONAL CRITICALITY, THE IOA HAS FOUND THE NASA SCENARIO CRIDIBLE AND THEREFORE AGREES WITH THE NASA FINDING. HOWEVER, BECAUSE THE ITEM NORMALLY FUNCTIONS WITHIN THE MISSION, THE IOA RECOMMENDS FAILURE OF SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-164
NASA FMEA #: 134-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 164
ITEM: CONDENSATE H2O RELIEF VALVE (ITEM 134)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B WHICH
THE IOA RECOMMENDS FAILED. THE IOA DOES NOT CONSIDER THE FAILURE
READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-165
NASA FMEA #: 134-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 165
ITEM: CONDENSATE H2O RELIEF VALVE (ITEM 134)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT REGARDING CRITICALITY AND SCREEN A. THE IOA AGREES WITH THE NASA SCREEN C ASSIGNMENT; HOWEVER, THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE WATER CARRYOVER IS AN UNDESIRABLE EFFECT AND SHOULD NOT BE CONSIDERED A DETECTION METHOD.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-162
NASA FMEA #: 134-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 162
ITEM: CONDENSATE H2O RELIEF VALVE (ITEM 134)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-123
NASA FMEA #: 135-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 123
ITEM: FEEDWATER RELIEF VALVE (ITEM 135)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-125
NASA FMEA #: 135-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 125
ITEM: FEEDWATER RELIEF VALVE (ITEM 135)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[X] *
IOA	[2 /2]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA FINDINGS. ALSO THE IOA WOULD RECOMMEND MODIFICATION OF EFFECTS TO INDICATE SCU PRESSURE REGULATION AS A REDUNDANT FUNCTION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-124
NASA FMEA #: 135-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 124
ITEM: FEEDWATER RELIEF VALVE (ITEM 135)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [NA] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR HARDWARE CRITICALITY AND SCREEN B. DUE TO THE DUAL O-RINGS THE IOA AGREES WITH THE NASA CRITICALITY BUT RECOMMENDS PASSAGE OF SCREEN B BE "NA". (THIS HAS BEEN AGREED TO BY THE NASA SSM).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-121
NASA FMEA #: 136-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 121
ITEM: FEEDWATER PRESSURE REGULATOR (ITEM 136)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[A]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

AN INTERNAL LEAKAGE PATH COULD PROVIDE WATER AT AN UNREGULATED PRESSURE TO THE SUBLIMATOR AND RESULT IN BREAKTHROUGH AND LOSS OF COOLING, THEREBY CAUSING MISSION TERMINATION. ADDITIONALLY, WITH AN SOP FAILURE THERE COULD BE LOSS OF LIFE. THE IOA THEREFORE RECOMMENDS A CRITICALITY OF 2/1R.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-119
NASA FMEA #: 136-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 119
ITEM: FEEDWATER PRESSURE REGULATOR (ITEM 136)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-120
NASA FMEA #: 136-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 120
ITEM: FEEDWATER PRESSURE REGULATOR (ITEM 136)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-122
NASA FMEA #: 136-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 122
ITEM: FEEDWATER PRESSURE REGULATOR (ITEM 136)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-128
NASA FMEA #: 137-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 128
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-129
NASA FMEA #: 137-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 129
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA
DISAGREES WITH THE NASA EVA ASSIGNMENT OF 2/2 IN THAT THE VALVE
IS NOT NOMINALLY CLOSED DURING EVA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-131
NASA FMEA #: 137-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 131
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-126
NASA FMEA #: 137-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 126
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-127
NASA FMEA #: 137-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 127
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR SCREEN B
REGARDING WHICH THE IOA AGREES WITH THE NASA FINDING.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-130
NASA FMEA #: 137-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 130
ITEM: FEEDWATER SHUTOFF VALVE (ITEM 137)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
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(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

A FAILURE SUCH AS THIS (AN ELECTRICAL SHORT) CAN RESULT IN THE VALVE FAILING CLOSED OR USE OF AVAILABLE BATTERY POWER DURING EVA; EITHER OF WHICH, IF COMBINED WITH AN SOP FAILURE, CAN RESULT IN LOSS OF LIFE. THEREFORE, A 2/1R CRITICALITY IS RECOMMENDED. THE IOA ALSO NOW RECOMMENDS PASSAGE OF ALL SCREENS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-132
NASA FMEA #: 138-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 132
ITEM: FEEDWATER PRESSURE SENSOR (ITEM 138)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-133
NASA FMEA #: 138-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 133
ITEM: FEEDWATER PRESSURE SENSOR (ITEM 138)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-135
NASA FMEA #: 138-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 135
ITEM: FEEDWATER PRESSURE SENSOR (ITEM 138)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-134
NASA FMEA #: 138-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 134
ITEM: FEEDWATER PRESSURE SENSOR (ITEM 138)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ASSIGNMENTS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-144
NASA FMEA #: 139-FM1, FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 144
ITEM: TEMPERATURE SENSOR & HARNESS (ITEM 139)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-146
NASA FMEA #: 139-FM2, FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 146
ITEM: TEMPERATURE SENSOR & HARNESS (ITEM 139)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-143
NASA FMEA #: 139-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 143
ITEM: TEMPERATURE SENSOR & HARNESS (ITEM 139)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(DD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-721X
NASA FMEA #: 140-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 721
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-756X
NASA FMEA #: 140-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 756
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/F] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA AGREE EXCEPT ON SCREEN B. THE IOA CONSIDERS THE FAILURE TO BE NOT DETECTABLE BECAUSE THE UNDESIRABLE EFFECTS OF HELMET FOGGING, WOULD BE THE FIRST INDICATION AND WOULD THEN REQUIRE EMERGENCY USE OF THE SOP.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-137
NASA FMEA #: 140-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 137
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-755X
NASA FMEA #: 140-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 755
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERS THE FAILURE TO NOT BE DETECTABLE BECAUSE THE UNDESIREABLE EFFECT OF HELMET FOGGING WOULD BE THE FIRST INDICATION AND THEN WOULD REQUIRE EMERGENCY USE OF THE SOP.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-142
NASA FMEA #: 140-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 142
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/]	[]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA IS IN AGREEMENT WITH THE NASA ASSIGNMENTS EXCEPT FOR
SCREEN B. BECAUSE WATER CARRYOVER INTO THE HELMET IS AN
UNDESIRE EFFECT, THE IOA DOES NOT CONSIDER IT A DETECTION
TECHNIQUE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-140
NASA FMEA #: 140-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 140
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[/]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA AGREES WITH THE NASA SCREEN C ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-139
NASA FMEA #: 140-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 139
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT FOR SCREEN B. THE IOA NOW AGREES WITH THE NASA SCREEN B ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-138
NASA FMEA #: 140-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 138
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-136
NASA FMEA #: 140-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 136
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[F]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN A. UPON
FURTHER REVIEW THE IOA NOW AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-141
NASA FMEA #: 140-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 141
ITEM: SUBLIMATOR (ITEM 140)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-159
NASA FMEA #: 141-FM1, FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 159
ITEM: GAS TRAP (ITEM 141)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA BELIEVES FAILURE OF REDUNDANT COOLING FUNCTIONS WHEN COMBINED WITH THE WORST CASE EFFECT OF THIS FAILURE (LOSS OF LCG COOLING) CAN RESULT IN LOSS OF LIFE AND THEREFORE WARRANTS A 2/1R CRITICALITY. THE IOA HAS ALSO TAKEN NOTE THAT THE CREWPERSON COULD SENSE THE TEMPERATURE CHANGE AND, THEREFORE, RECOMMENDS PASSAGE OF SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-160
NASA FMEA #: 141-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 160
ITEM: GAS TRAP (ITEM 141)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONSIDERS THE WORST CASE LOSS OF WATER FLOW TO BE A
FUNCTIONAL "1R" WHEN REDUNDANT COOLING FUNCTIONS ARE ALSO
CONSIDERED FAILED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-158
NASA FMEA #: 141-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 158
ITEM: GAS TRAP (ITEM 141)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-161
NASA FMEA #: 141-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 161
ITEM: GAS TRAP (ITEM 141)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[F]	[X]
COMPARE	[/]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN C AND IS IN AGREEMENT WITH THE REMAINING ASSIGNMENTS EXCEPT FOR SCREEN B. THE IOA CONSIDERS WATER CARRYOVER AN UNDESIRE EFFECT AND NOT A DETECTION TECHNIQUE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-113
NASA FMEA #: 142-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 113
ITEM: WATER RELIEF VALVE (ITEM 142)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

WITH THE EXCEPTION OF SCREEN B, THE IOA AGREES WITH THE NASA ANALYSIS. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE RELIEF VALVE IS FULLY EXPECTED TO OPERATE DURING A MISSION (WHETHER TO PERMIT RESERVE TANK USAGE OR DRAINAGE) AND ITS FAILURE WOULD NOT BE READILY DETECTABLE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-114
NASA FMEA #: 142-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 114
ITEM: WATER RELIEF VALVE (ITEM 142)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A HARDWARE CRITICALITY OF "2" TO REFLECT WORST CASE MISSION IMPACT (LOSS OF 30 MINUTES FEEDWATER TIME) AND TO REFLECT CONCURRENT LOSS OF SOP WHICH RESULTS IN LOSS OF LIFE. ADDITIONALLY, THE IOA RECOMMENDS FAILURE OF SCREEN B DUE TO THE ITEM'S OPERATION AS PART OF A NORMAL MISSION WHICH CAN INCLUDE H2O DRAINAGE. SPRING DAMAGE IS ALSO A VIABLE CAUSE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-115
NASA FMEA #: 142-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 115
ITEM: WATER RELIEF VALVE (ITEM 142)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-116
NASA FMEA #: 143-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 116
ITEM: WATER CHECK VALVE (ITEM 143)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-117
NASA FMEA #: 143-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 117
ITEM: WATER CHECK VALVE (ITEM 143)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN LIMITED AGREEMENT. THE IOA RECOMMENDS ADDITION OF SPRING FRACTURE TO THE CAUSES AND THE FAILURE OF SCREEN B. THE ITEM'S OPERATION IS REQUIRED TO CHANGE THE RESERVE TANK AND IS THEREFORE NOT STRICTLY STANDBY REDUNDANT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-118
NASA FMEA #: 143-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 118
ITEM: WATER CHECK VALVE (ITEM 143)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-213
NASA FMEA #: 145-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 213
ITEM: RELIEF VALVE AND ORIFICE (ITEM 145)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-214
NASA FMEA #: 145-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 214
ITEM: RELIEF VALVE AND ORIFICE (ITEM 145)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-215
NASA FMEA #: 145-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 215
ITEM: RELIEF VALVE AND ORIFICE (ITEM 145)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN ASSIGNMENTS. HOWEVER, DISAGREEMENT EXISTS ON THE CRITICALITY ASSIGNMENT. IF A SECOND FAILURE OF THE SOP REGULATOR WERE TO OCCUR THE O2 LINES AND VENT LOOP COULD BE EXPOSED TO 200PSI OXYGEN WHICH CAN RESULT IN POSSIBLE LOSS OF STRUCTURAL INTEGRITY AND FIRE (RESULTANT FROM A "VIOLET" LOSS OF STRUCTURAL INTEGRITY).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-217
NASA FMEA #: 146-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 217
ITEM: POSITIVE PRESSURE RELIEF VALVE (ITEM 146)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-216
NASA FMEA #: 146-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 216
ITEM: POSITIVE PRESSURE RELIEF VALVE (ITEM 146)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-218
NASA FMEA #: 146-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 218
ITEM: POSITIVE PRESSURE RELIEF VALVE (ITEM 146)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT IN THAT THE IOA ALSO NOW
CONCURS WITH THE NASA SCREEN B ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-723X
NASA FMEA #: 146-FM4

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 723
ITEM: POSITIVE PRESSURE RELIEF VALVE (ITEM 146)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[P]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-219
NASA FMEA #: 147-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 219
ITEM: NEGATIVE PRESSURE RELIEF VALVE (ITEM 147)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [P] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-220
NASA FMEA #: 147-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 220
ITEM: NEGATIVE PRESSURE RELIEF VALVE (ITEM 147)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DISAGREES WITH THE NASA ANALYSIS. THE IOA BELIEVES THE NASA HAS ACTUALLY COMBINED THE EVA PORTION OF THIS FAILURE MODE INTO NASA FMEA 147FM1 - WHICH IS A 2/1R CRITICALITY. THE IOA THEREFORE RECOMMENDS THE EVA PHASE BENALYZED HEREIN AND THE 2/1R CRITICALITY ASSIGNED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-221
NASA FMEA #: 147-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 221
ITEM: NEGATIVE PRESSURE RELIEF VALVE (ITEM 147)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[N /N]	[]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS BUT WOULD INCLUDE SPRING FRACTURE AS A VIABLE CAUSE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-106
NASA FMEA #: 148-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 106
ITEM: RESERVE H2O TANK (ITEM 148)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE NASA FMEA DID NOT FULLY EXTRAPOLATE THE EFFECTS OF THE FAILURE ON EARLY LOSS OF COOLING AND WATER IN THE VENT LOOP. ALSO, NASA DID NOT CONSIDER THE SOP AS PROVIDING A REDUNDANT FUNCTION AND, THEREFORE, DID NOT FAIL IT IN ARRIVING AT THE FUNCTIONAL CRITICALITY. THE IOA BELIEVES THE SOP DOES PROVIDE UNLIKE REDUNDANCY AND THAT THE CRITICALITY SHOULD BE 2/1R.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-108
NASA FMEA #: 148-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 108
ITEM: RESERVE H2O TANK (ITEM 148)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[[/] [] P] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

EXCEPT FOR SCREEN B, THE IOA AGREES WITH THE NASA ANALYSIS CRITICALITY AND REDUNDANCY SCREEN ASSIGNMENTS; ADDITIONALLY, THE IOA DISAGREES WITH THE SCOPE OF EFFECTS DEFINED THEREIN. ASSUMING THE CREWMEMBER IS EVA, A FAILURE SUCH AS THIS WOULD DRAIN THE RESERVE TANK. THIS WOULD CAUSE THE 143 CHECK VALVE TO OPEN AND THEN DRAIN THE PRIMARY TANKS. AS SUCH NOT ONLY THE "LAST 30 MINUTE" WATER SUPPLY BUT THE ENTIRE SUPPLY COULD BE LOST. THIS WOULD BE READILY DETECTABLE BY THE CREWMEMBER. REGARDING FAILURE MODE SCOPE, TPC AND TPL SHOULD ALSO BE INCLUDED.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-107
NASA FMEA #: 148-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 107
ITEM: RESERVE H2O TANK (ITEM 148)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-724X
NASA FMEA #: 148-FM4

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 724
ITEM: RESERVE WATER TANK (ITEM 148)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[] *
IOA	[2 /1R]	[P]	[F]	[F]	[]
COMPARE	[/]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN C WHICH
THE IOA NOW CONCURS WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-704X
NASA FMEA #: 150-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 704
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-466
NASA FMEA #: 150-FM10

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 466
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

(ALSO REFERENCE ASSESSMENT MDAC ID 458). THE IOA RECOMMENDS A 2/2 CRITICALITY DUE TO INABILITY TO ASCERTAIN VERACITY OF CWS. THE IOA AGREES WITH THE REMAINDER OF THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-467
NASA FMEA #: 150-FM11

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 467
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[]	[]	[]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

(ALSO, REFERENCE ASSESSMENT MDAC ID 457). THE IOA AGREES WITH THE NASA ANALYSIS, HOWEVER, NASA SHOULD PROVIDE MORE SPECIFIC CAUSES.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-711X
NASA FMEA #: 150-FM12

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 711
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-757X
NASA FMEA #: 150-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 757
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-758X
NASA FMEA #: 150-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 758
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA EXCEPT A SCREEN B. BECAUSE C02 MONITORING IS NOT PERFORMED AT X=1, SECOND FAILURE OF C02 CONTROL CAN RESULT IN UNDETECTED C02 INCREASES LEADING TO LOSS OF LIFE. NO INDICATION OF THE X=1 FAILURE IS PROVIDED THE CREWPERSON.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-705X
NASA FMEA #: 150-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 705
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA, HOWEVER, DOES
RECOMMEND THE CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-465
NASA FMEA #: 150-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 465
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA, HOWEVER, DOES RECOMMEND THE CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-706X
NASA FMEA #: 150-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 706
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA DOES
RECOMMEND THE NASA CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-707X
NASA FMEA #: 150-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 707
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA DOES RECOMMEND THE NASA CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-708X
NASA FMEA #: 150-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 708
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA DOES RECOMMEND THE NASA CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-709X
NASA FMEA #: 150-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 709
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA DOES RECOMMEND THE NASA CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-462
NASA FMEA #: 150-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 462
ITEM: CAUTION AND WARNING ELECTRONICS (ITEM 150)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[]	[]	[]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. HOWEVER, THE IOA DOES
RECOMMEND THE NASA CAUSE(S) BE MORE SPECIFIC.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-710X
NASA FMEA #: 150-FM9

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 710
ITEM: CAUTION AND WARNING ELECTRONICS

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/1R TO REFLECT POSSIBLE CPU FAILURE COMBINING WITH AN EMU FAILURE (E.G. CCC FAILS CO2 CONTROL) AND CAUSING LOSS OF LIFE. HOWEVER, THE IOA ALSO NOW RECOMMENDS PASSAGE OF SCREEN B DUE TO THE AVAILABILITY OF THE BITE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-726X
NASA FMEA #: 161-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 726
ITEM: PLSS/SOP TMG (ITEM 161)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[1 /1]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[1 /1] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA IS CONCERNED THAT LOCAL HOT SPOTS CAN RESULT ON PLSS OR SOP BOTTLES IF HEAT IS NOT EFFICIENTLY CONDUCTED. IF THIS RESULTS THE OXYGEN BOTTLES COULD RUPTURE VIOLENTLY AND CAUSE LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-191
NASA FMEA #: 170-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 191
ITEM: MUFFLER (ITEM 170)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-169
NASA FMEA #: 171-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 169
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[F]	[X]
COMPARE	[N /]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONCURS WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-171
NASA FMEA #: 171-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 171
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-168
NASA FMEA #: 171-FM2, FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 168
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B ASSIGNMENT AND IS IN AGREEMENT WITH THE REMAINING ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-170
NASA FMEA #: 171-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 170
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA HARDWARE CRITICALITY; HOWEVER, THE IOA DISAGREES WITH THE FUNCTIONAL CRITICALITY. THE FUNCTIONAL CRITICALITY SHOULD BE A 1R WHEN REDUNDANT FUNCTION FAILURES ARE CONSIDERED. THESE REDUNDANT FUNCTIONS MAY BE REVIEWED DUE TO EARLY MISSION TERMINATION FROM DECREASE IN AVAILABLE BATTERY POWER RESERVE. HOWEVER, BECAUSE OF BATTERY TIME REMAINING MESSAGE THE IOA NOW RECOMMENDS PASSAGE OF SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-167
NASA FMEA #: 171-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 167
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-172
NASA FMEA #: 171-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 172
ITEM: H2O SHUTOFF VALVE (ITEM 171)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA DIFFER REGARDING FUNCTIONAL CRITICALITY. BECAUSE THE BATTERY MAY BE DRAINED AT A GREATER THAN NORMAL RATE 30 MINUTES NOTICE MAY BE TOO LITTLE AND SOP USAGE MAY RESULT. LOSS OF THE SOP CAN THEREFORE RESULT IN CREWPERSON LOSS. THE IOA RECOMMENDS A 3/1R CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-174
NASA FMEA #: 172-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 174
ITEM: COOLANT RELIEF VALVE (ITEM 172)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[2 /2]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-176
NASA FMEA #: 172-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 176
ITEM: COOLANT RELIEF VALVE (ITEM 172)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA FINDINGS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-173
NASA FMEA #: 172-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 173
ITEM: COOLANT RELIEF VALVE (ITEM 172)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-727X
NASA FMEA #: 174-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 727
ITEM: REAL TIME DATA SYSTEM (ITEM 174)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-728X
NASA FMEA #: 174-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 728
ITEM: REAL TIME DATA SYSTEM

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [F] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT. ALSO, THE IOA DOES RECOMMEND THE NASA PROVIDE MORE SPECIFIC CAUSES. THE IOA RECOMMENDS THE NASA ANALYSIS ENCOMPASS SHORTS PRIOR TO THE LIMITING RESISTOR FOR THE WORST CASE WHICH CAN RESULT IN A 2/1R WITH LOSS OF REDUNDANT FUNCTIONS (C&W, CCC, AND/OR SOP).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-322
NASA FMEA #: 200-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 322
ITEM: SOP ASSEMBLY (ITEM 200)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [P] [P] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 2/1R CRITICALITY DUE TO THE FAILURE NOT BEING WHOLELY WITHIN THE SOP. THE FAILURE WOULD FIRST RESULT IN IMPACT TO THE PLSS AND NOT THE SOP. LOSS OF THE PLSS WOULD THEN REQUIRE A CONCURRENT LOSS OF THE SOP MAKEUP CAPABILITY TO CAUSE LOSS OF LIFE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-295A
NASA FMEA #: 200-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 295
ITEM: SECONARY OXYGEN BOTTLE (ITEM 210)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONCURS WITH THE NASA ANALYSIS. HOWEVER, THE IOA RECOMMENDS ADDITION OF SEAL FAILURE AS A CAUSE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-295
NASA FMEA #: 210-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 295
ITEM: SECONARY OXYGEN BOTTLE (ITEM 210)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA CONCURS WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-296
NASA FMEA #: 210-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 296
ITEM: SECONARY OXYGEN BOTTLE (ITEM 210)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 / 1]	[]	[]	[]	[X] *
IOA	[1 / 1]	[P]	[P]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-307
NASA FMEA #: 213B-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 307
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT ON THE ANALYSIS AND
CRITICALITY ASSIGNMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-305
NASA FMEA #: 213B-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 305
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN
EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-306
NASA FMEA #: 213B-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 306
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-303
NASA FMEA #: 213B-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 303
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-302
NASA FMEA #: 213B-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 302
ITEM: 1ST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-729X
NASA FMEA #: 213B-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 729
ITEM: FIRST STAGE REGULATOR (ITEM 213B)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-309
NASA FMEA #: 213D-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 309
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-313
NASA FMEA #: 213D-FM10

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 313
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86	NASA DATA:
ASSESSMENT ID: EMU-310	BASELINE []
NASA FMEA #: 213D-FM2, FM3, FM4	NEW []

SUBSYSTEM: EMU
MDAC ID: 310
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[NA]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM. ADDITIONALLY, THE IOA RECOMMENDS COMBINING THE THREE NASA FAILURE MODES INTO ONE DUE TO ALL THREE FAILURE MODES BEING THE SAME EXCEPT FOR LIMITATION ON THE FAILURE IN 213D-FM2 AND 213D-FM3.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-311
NASA FMEA #: 213D-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 311
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[NA]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN
EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-312
NASA FMEA #: 213D-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 312
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-308
NASA FMEA #: 213D-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 308
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-730X
NASA FMEA #: 213D-FM8

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 730
ITEM: SECOND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-312A
NASA FMEA #: 213D-FM9

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 312
ITEM: 2ND STAGE REGULATOR (ITEM 213D)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 1R]	[P]	[P]	[P]	[X]
COMPARE	[/ N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

UPON FURTHER REVIEW THE IOA AGREES WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-317
NASA FMEA #: 213E-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 317
ITEM: SOP PRESSURE GAGE (ITEM 213E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-316
NASA FMEA #: 213E-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 316
ITEM: SOP PRESSURE GAGE (ITEM 213E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-314
NASA FMEA #: 213E-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 314
ITEM: SOP PRESSURE GAGE (ITEM 213E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-315
NASA FMEA #: 213E-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 315
ITEM: SOP PRESSURE GAGE (ITEM 213E)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[F]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-318
NASA FMEA #: 213F-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 318
ITEM: SOP FILL PORT QD AND FILTER (ITEM 213F)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-301
NASA FMEA #: 215-FM1, FM7

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 301
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /2]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT REGARDING FUNCTIONAL CRITICALITY. A LOW READING (OR LOSS OF OUTPUT) FOR THE PRESSURE TRANSDUCER WILL NOT RESULT IN PERFORMANCE LOSS OF THE SOP BUT IT WILL INCREASE THE URGENCY OF RETURN TO THE ORBITER AIRLOCK. AS SUCH, ONLY ADDITIONAL FAILURES WHICH ARE THEMSELVES LIFE CRITICAL (E.G. EXTERNAL LEAKAGE) CAN RESULT IN A 2/1R AND SHOULD BE KEPT SEPARATE. THE IOA THEREFORE RECOMMENDS A 2/2 CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-300
NASA FMEA #: 215-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 300
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS BECAUSE THIS FAILURE MODE
CAN POSSIBLY MASK OTHER SYSTEM FAILURES UNDER THE GUISE OF
ACCEPTABLE PERFORMANCE AND INTEGRITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-297
NASA FMEA #: 215-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 297
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE 1/1 CRITICALITY DUE TO THE SOP BEING AN EMERGENCY SYSTEM.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-298
NASA FMEA #: 215-FM4

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 298
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[1 /1]	[]	[]	[]	[X] *
IOA	[1 /1]	[P]	[F]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-298A
NASA FMEA #: 215-FM5

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 298
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[1 /1]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[1 /1] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE NOT IN AGREEMENT; HOWEVER, THE IOA CONCURS WITH THE SEPARATION OF FAILURE MODES (FM4 VS. FM5) TO BE MORE SPECIFIC. BECAUSE A FAILURE OF THE PRESSURE SENSITIVE INTERFACE HAS THE POTENTIAL TO BE VIOLENT WITH A RESULTANT OXYGEN FIRE, THE IOA RECOMMENDS A 1/1 CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-299
NASA FMEA #: 215-FM6

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 299
ITEM: PRESSURE TRANSDUCER (ITEM 215)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN GENERAL AGREEMENT EXCEPT FOR SCREEN B. THE IOA NOW AGREES WITH THE NASA SCREEN B ASSIGNMENT. ADDITIONALLY, THE IOA IS IN FULL AGREEMENT WITH THE FAILURE SCENARIO DEFINED BY THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-508
NASA FMEA #: 300-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 508
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-505
NASA FMEA #: 300-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 505
ITEM: SHEAR PLATE ASSEMBLY (115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[. /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-760X
NASA FMEA #: 300-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 760
ITEM: DCM ELECTRONICS (ITEM 350)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [F] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B. THE IOA RECOMMENDS FAILURE OF SCREEN B BECAUSE THE FAILURE MODE IS NOT DETECTABLE AND DOESN'T HAVE AUTOMATIC BACKUP FOR THE REQUIRED FUNCTION. THE IOA THEREFORE RECOMMENDS INCLUSION IN THE CIL.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-507
NASA FMEA #: 300-FM3

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 507
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /3]	[]	[]	[]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 3/3 CRITICALITY DUE TO IOA UNDERSTANDING THAT LEAK CHECK IS PERFORMED MANUALLY AS A NORM. THEREFORE NO MISSION IMPACT SHOULD OCCUR.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-504
NASA FMEA #: 300-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 504
ITEM: SHEAR PLATE ASSEMBLY (115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ANALYSES ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-506
NASA FMEA #: 300-FM5

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 506
ITEM: SHEAR PLATE ASSEMBLY

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-503
NASA FMEA #: 300-FM6

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 503
ITEM: SHEAR PLATE ASSEMBLY (115)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[N /N]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[3 /3]	[]	[]	[]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA DISAGREES WITH THE NASA ANALYSIS BECAUSE OF THE
AVAILABILITY OF LEAK CHECK BOTH FROM AUTOMATIC (INTERNAL) AND
MANUAL CAPABILITIES.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/06/87
ASSESSMENT ID: EMU-759X
NASA FMEA #: 300-FM7

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 759
ITEM: DCM

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[F]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[F]	[X]
COMPARE	[/N]	[N]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [P] [] [F] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

IF THE ENTIRE NUMBER OF SCREWS FAILED BRACKET SEPARATION CAN RESULT IN SUIT DEPRESSURIZATION AND LOSS OF LIFE. SCREEN A SHOULD BE PASSED DUE TO CAPABILITY FOR CHECKOUT DURING GROUND TURNAROUND. SCREEN C SHOULD BE FAILED TO REFLECT A COMMON CAUSE FAILURE FOR THE SCREWS (E.G. IMPACT).

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-363
NASA FMEA #: 311-FM1, FM3

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 363
ITEM: SUIT PRESSURE GAGE (ITEM 311)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-362
NASA FMEA #: 311-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 362
ITEM: SUIT PRESSURE GAGE (ITEM 311)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-359
NASA FMEA #: 311-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 359
ITEM: SUIT PRESSURE GAGE (ITEM 311)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-365
NASA FMEA #: 314-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 365
ITEM: DCM PURGE VALVE (ITEM 314)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA SCREEN B.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-366
NASA FMEA #: 314-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 366
ITEM: DCM PURGE VALVE (ITEM 314)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-368
NASA FMEA #: 314-FM1

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 368
ITEM: DCM PURGE VALVE (ITEM 314)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT EXCEPT ON SCREEN B
REGARDING WHICH THE IOA NOW AGREES WITH THE NASA.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-367
NASA FMEA #: 314-FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 367
ITEM: DCM PURGE VALVE (ITEM 314)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-364
NASA FMEA #: 314-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 364
ITEM: DCM PURGE VALVE (ITEM 314)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. THE IOA WOULD RECOMMEND
ADDING INTERNAL LEAKAGE TO THIS FAILURE MODE.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-501
NASA FMEA #: 321-FM1, FM2

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 501
ITEM: COOLING CONTROL VALVE (ITEM 321)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA CRITICALITY.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-502
NASA FMEA #: 321-FM3

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 502
ITEM: COOLING CONTROL VALVE (ITEM 321)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-500
NASA FMEA #: 321-FM4

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 500
ITEM: COOLING CONTROL VALVE (ITEM 321)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA SCREEN B AND IS IN AGREEMENT WITH
THE REMAINING ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-369A
NASA FMEA #: 330-FM1

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 369
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R]	[P]	[NA]	[P]	[D]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA RECOMMENDS A 3/1R CRITICALITY TO REFLECT THE WORST CASE MISSION SCENARIO. ADDITIONALLY, THE IOA RECOMMENDS COMBINING 330-FM1 AND FM2.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-375
NASA FMEA #: 330-FM10

NASA DATA:
BASELINE []
NEW []

SUBSYSTEM: EMU
MDAC ID: 375
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT. CAUSES SHOULD BE EXPANDED
TO INCLUDE VIBRATION AND CORROSION.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-376
NASA FMEA #: 330-FM11

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 376
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[2 /2]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

BECAUSE NSTS 22206 PROHIBITS USE OF CONTINGENCY OR OFF-NOMINAL PROCEDURES TO DOWNGRADE A CRITICALITY, THE IOA AGREES WITH THE NASA ANALYSIS.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-377
NASA FMEA #: 330-FM12

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 377
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[2 / 2]	[P]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-383
NASA FMEA #: 330-FM13

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 383
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 2R]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [A]
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA ANALYSIS DUE TO GROUND RULES NOT PERMITTING CONSIDERATION OF SECOND EMU/SCU AS REDUNDANT. ADDITIONALLY, THE SPARE BATTERY IS NOT CONSIDERED REDUNDANT EITHER.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-382
NASA FMEA #: 330-FM14

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 382
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[P]	[F]	[P]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AND THE NASA ARE IN AGREEMENT.

APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 12/10/86
ASSESSMENT ID: EMU-378
NASA FMEA #: 330-FM15

NASA DATA:
BASELINE []
NEW [X]

SUBSYSTEM: EMU
MDAC ID: 378
ITEM: COMMON MULTIPLE CONNECTOR (ITEM 330)

LEAD ANALYST: G. RAFFAELLI

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

THE IOA AGREES WITH THE NASA CRITICALITY ASSIGNMENT AND IS IN AGREEMENT WITH THE REMAINING ANALYSIS.

MCDONNELL DOUGLAS ASTRONAUTICS COMPANY - HOUSTON
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